Seeing the Forest Beneath the Trees: The Social and Economic Potential of Non-Timber Forest Products and Services In the Queen Charlotte Islands/Haida Gwaii

South
Moresby
Forest
Replacement
Account

By:

[1]Sinclair Tedder
British Columbia Ministry of Forests

And

[2]Darcy Mitchell and [3]Ramsay Farran
Of
Mitchell Consulting Associates

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[1] Sinclair Tedder: An economist with the British Columbia Ministry of Forests, Victoria B.C. focusing on community dependence, community impacts related to changing timber supplies, and non-timber forest products. Mr. Tedder can be reached at Sinclair.Tedder@gems1.gov.bc.ca

[2] Darcy A. Mitchell, Ph.D.: Partner in Mitchell Consulting Associates, Adjunct Faculty, University of Victoria and Associate Faculty, Royal Roads University. Professional and academic interests in management of new and developing resources, First Nations governance and economic development, and post-secondary curriculum development in resource and environmental policy and management. Dr. Mitchell can be reached at mdarcym@uvic.ca

[3] Ramsay Farran: Since qualifying as a Chartered Accountant in the United Kingdom in 1972, Ramsay Farran has developed an extensive range of experience and expertise in business advisory services and management; banking and investment services; and real estate investment and development. As a partner in Mitchell Consulting Associates, Ramsay provides business management, financial and economic development advice to First Nations and other coastal communities and business consulting services to individual entrepreneurs. Mr. Farran can be reached at farran@uniserve.com

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Thanks to those elected and appointed officials of the Skidegate and Masset Band Councils who shared their insights on the NTFP industry and thanks go out to the over 80 people who attended our six Open Houses and provided much valuable information and many recommendations. Many others both on- and off-Island have assisted us in assembling information for this report. We estimate that we spoke directly with some 10% of the adult population of the Queen Charlotte Islands/Haida Gwaii (QCI/HG); many more Islanders were made aware of the project's existence through media coverage and "word of mouth."

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Finally, the information presented and any errors or omissions are solely the responsibility of the authors.

Executive Summary

The subject of non-timber forest products (NTFPs) in the Queen Charlotte Islands/Haida Gwaii (QCI/HG) is fraught with competing interests and uncertainty. Competing interests related to the variety of issues, concerns and attitudes voiced in the community, and uncertainty related to the commercial viability of any NTFP venture. The central question for the QCI/HG is how to resolve these issues amidst the ongoing, likely expanding, and virtually unregulated harvest of NTFPs. While this report examines the social and economic potential of NTFPs on the QCI/HG, there are a number of social and economic constraints that limit this potential.

Unfortunately, we do not have well researched biological knowledge of QCI NTFPs, or an understanding of the volume of each NTFP that could be harvested without affecting existing biological or social structures. However, we do know that harvesting mosses can be damaging to the forest ecosystem and that berries constitute not only a food source, but also a social medium to local Haida.

Any development of NTFPs on the QCI/HG is also constrained by business realities, such as financing, labour and transportation costs, and marketing knowledge and access. Many of these can be overcome, however, through joint venturing and cooperative type approaches to reducing costs.

Regardless of these constraints, we believe that there are potential NTFP opportunities on the QCI/HG that can meet social objectives and overcome business limitations. The way to achieve this balance is to protect sensitive areas through land use planning processes, or for the community to actively take part in the development of these opportunities. If not, existing and any new NTFP ventures will create tensions within the community and benefit fewer Islanders.

E1. The Mushroom Industry

The edible wild mushroom harvest on the QCI/HG provides an important source of annual income to many Islanders and non-Islanders. However, there are competing interests in the forest, which will require cooperation between mushroom pickers, the Forest Service, and timber companies.

The QCI/HG mushroom industry contributes to a worldwide trade in wild mushroom products; however, British Columbia's role in this worldwide trade is relatively minor.

In a normal year, the QCI/HG produces approximately 250,000 pounds of mushrooms (mainly chanterelles) and as much as 350,000 pounds in an exceptional year. In a poor year, however, that volume could be less than half. Nineteen ninety-nine was considered an extremely poor year for chanterelles and anecdotal evidence suggests that from 45,000 to 67,000 pounds were harvested 7and shipped off the islands. The volume of king boletes harvested, however, was said to be the best in five years and was approximately one-fifth of the total volume shipped in 1999. The average price paid to pickers for chanterelles was approximately $4.50 per pound, and for king boletes $8.00 per pound, and buying agent commissions were $0.50 per pound, making the total QCI/HG purchase value an estimated $250,000 to $380,000. The average declared export value was approximately $400,000 to $600,000, based on an average declared price of $8.80 per pound.

The QCI/HG is generally considered to be the source of the province's highest quality chanterelles. However, this perception is slowly changing. Larger volumes of chanterelles are being harvested from Vancouver Island, and Eastern European and former Soviet states have increased their harvests as well. These factors, as well as high transportation and labour costs, are making the profitability of the QCI/HG chanterelle harvest more difficult to maintain.

E2. Haida Concerns

Forest products have long been a part of Haida culture and subsistence. The Haida community has a range of views concerning the use of NTFPs for commercial use, from a clear "stay away" point of view, to a very guarded view of their potential for commercial use, given very specific conditions. At the open houses held in August, 1999, and January, 2000, numerous Haida expressed their opposition to any commercial development that may affect the traditional use of products from the forest, and any development that fails to recognize and protect aboriginal rights and title. The Council of Haida Nation (CHN) provided several comments on the use of NTFPs.

Specifically, the CHN stated that the subject of NTFPs, including this research project, should reflect the concerns of the Haida people. These concerns include:

- Providing values for products, which may subsequently attract people to the QCI/HG to harvest NTFPs is of concern, especially prior to the management of the resource;
- Resolution of land claims and management issues is necessary before any further development occurs;
- Haida rights must be recognized prior to the issuance of any form of tenure rights to NTFPs;
- Sustainability must be established prior to any harvest. These studies must be carried out by personnel approved by the Haida;
- Haida must have full participation in any management of the commercial use of NTFPs;
- The management and commercial use of NTFPs must not interfere with traditional and subsistence needs of the Haida people. Haida sacred and traditional harvest sites must be protected.
- The concept of not using NTFPs for commercial purposes must be understood;
- The emphasis of this report should be on the settlement of land use and property rights issues, not the further development of resources.

E3. The Community and its Concerns

The remote location of the QCI/HG creates a natural environment with many unique or rare characteristics. The community, too, has its own sense of uniqueness. Many residents, both Haida and non-Haida, value their independence from the rest of the province and are concerned about sacrificing Island values in the interest of economic development. Many concerns raised about the commercial development of NTFPs also reflect concerns often voiced in other communities where NTFPs are becoming a larger sector of local economies. These concerns are widely recognized and shared by researchers, government and the various NTFP industry sectors.

Among the most urgent and important issues identified is the lack of baseline ecological, economic and social information required to make informed decisions on the management of the harvest. We also have few measures for monitoring ecological, economic and social impacts of the NTFP industry. Islanders, especially those involved with the wild mushroom harvest, felt that the dominance of timber interests in the management of forest resources means that valuable non-timber resources are largely ignored in forest planning.

Some Islanders - both Haida and non-Haida - are concerned about the social impacts of the mushroom harvest and the harvesting of other NTFPs, and more generally, about new forms of resource development that they feel may offer few benefits to Islanders themselves.

These concerns are linked by a common thread, which is often called "the problem of the commons." The problem of the commons refers to a situation in which a resource - such as fishing, grazing or non-timber forest products - is available to everyone who wishes to use it. Legally, the "Crown" owns the commons that generate non-timber forest products. Up to now, government has chosen not to introduce rules about the use of these products, except in particular cases such as harvesting in parks and for products such as Cascara and Yew bark. NTFPs are a classic "common property resource," subject to neglect, misuse and under-investment. An open commons can "work" if the level of demand for its resources is low enough that there is no competition between users and no problem of potentially overusing or destroying the resource itself. As Islanders told us, however, this is not the case. If Islanders wish to protect traditional uses and recreational uses and build a sustainable NTFP industry, the problem of the commons will eventually have to be addressed.

Most of the issues that were raised by Islanders are not themselves related to economic viability or the potential to enhance employment and income. They provide rather, the context within which economic issues must be addressed. Successful, sustainable NTFP businesses will depend on the successful resolution of these concerns.

E4. Approaches to Community Concerns

Island and other commentators have suggested a number of options for addressing the issues raised. Many of these suggestions have to do with how to manage the NTFP harvest, how to obtain the information needed to properly manage the resource, and how to distribute the responsibility for, and benefits from, the NTFP industry among local and other authorities.

Generally, suggestions for dealing with these problems range from regulation of some or all aspects of the industry (usually beginning with licensing buyers), through to tenures and other forms of property rights, and finally to a strict "hands-off" approach to the current situation. These approaches are not mutually exclusive and not all require government intervention (many Islanders expressed their strong opposition to conventional regulation of NTFPs). The Community Forest Pilot Project provides an opportunity for the QCI/HG to manage NTFPs together with timber and other forest values. Some cooperative or collaborative arrangements may also be possible among the various users of the forest resource, and those who have the legal responsibility for resource management. The report discusses how some of these ideas might be put into place, especially with regard to developing a better information base to support sustainable use of the NTFP resource.

E5. Business Climate

In general, the business climate on the QCI/HG does not seem overly hospitable to outside investors. A sentiment commonly expressed was that the extractive industries had "taken all the wealth" and given nothing back. Unresolved aboriginal rights and title issues have created uncertainty for off-Island investors. An active community interest in any venture and its potential impact on the "life on the islands" were also noted. We therefore think it is unlikely that many outside investors who are unwilling to become part of the community could be expected to risk their capital given the apparent lack of positive reinforcement from the communities involved.

It seems likely that both local and government support (direct or indirect) will be needed to promote investment in the Islands. Small-scale cottage industries, however, offer some potential for local private entrepreneurs. Small-scale, community-based development may be in keeping with Island aspirations for the economic future; however, it should be noted that in the short term such activity is unlikely to replace the types and levels of employment generated by industrial logging and a healthy fishing industry. Sufficient economic security to those whose history and culture tie them to the land and to those more recent arrivals who value the quality of life offered by the "Misty Isles" may therefore be difficult to attain.

The Islands have for a long time relied on logging, fishing and government to provide income. With approximately 77% (1996) of the working population engaged in these sectors, apart from tourism (14%), there is a low representation of individual entrepreneurs, (except in small-scale arts and crafts). We were told by more than one local entrepreneur that they would not at present consider further investment in the Islands. In addition, the minimum acceptable wage on QCI/HG seems to be higher than other areas of the province, while high transportation and power costs are further disincentives towards investment.

A difficulty in raising capital and investment funds due to a lack of easily valued security available to lenders may indicate that a co-venture with either governments, communities or the Haida are desirable options for individual entrepreneurs. In the Haida communities of Old Masset and Skidegate, Economic Development Corporations have been established. These, together with funding sources such as the Gwaii Trust, may offer some good possibilities for investment in local entrepreneurs.

E6. Business Opportunities

While several opportunities present interesting longer term possibilities, our observations regarding the general business climate have led us to focus our recommendations on those ventures which in the short run could be developed primarily with on-Island resources and expertise. In these, as in other ventures, community support (or at least the absence of active opposition) will be essential elements of success.

In the area of NTFPs the main QCI/HG product is the chanterelle mushroom. In order to maximize the economic potential we therefore recommend that a strong focus be given to expansion of opportunities in this area. It is always easier to expand a business with which the community is familiar than to start one from ground zero.

Other products where good short-term commercial opportunities were noted are eco-tourism, local food substitution, salal and floral products, berries, "willow" furniture, crafts, and deer hides. Medicinals may offer interesting opportunities; however this type of development is subject to further research on sustainable harvest levels and resolution of issues such as intellectual property rights. We present our recommendations in Chapter 6 "ten best picks."

Preface: Report rationale and introduction to the Queen Charlotte Islands/Haida Gwaii.

The commercial and non-commercial harvest of non-timber forest products (NTFPs) is not new, yet economic development practitioners in B.C. have only recently started to consider its role in economic development and community diversification. NTFPs - including wild mushrooms, berries and other wild foods, plants used in the floral and craft industry, and medicinal plants - have a long history of use among indigenous peoples and have become an important source of annual or supplemental income for many other individuals and communities.

The South Moresby Forest Replacement Account (SMFRA) has recognized the use and potential of non-timber forest products and has provided the funds necessary to undertake this study. The purpose of the study is to:

1. present a social and economic profile of the Queen Charlotte Islands/Haida Gwaii (QCI/HG) non-timber forest products (NTFP) industry and examine the relationship between the forest industry and harvest of NTFPs;
2. suggest approaches of monitoring annual employment and other indicators of the NTFP industry; and
3. assess the development potential of a range of NTFPs on the QCI/HG, based on current local and international market trends, and social objectives.

The use and development of any non-timber forest product outlined in this report is a matter of individual and community choice and should be socially acceptable, economically viable, and ecologically sustainable.

As part of its ongoing involvement in NTFP research and community development activities, the research team has become part of a growing network of individuals and organizations committed to the orderly, sustainable and beneficial growth of this industry. Many of the ideas expressed in this report have grown out of numerous informal discussions with colleagues in academic, community, government and industry organizations throughout B.C., the Pacific Northwest, Ontario, Quebec and Europe.

P1. An Introduction to the Queen Charlotte Islands/Haida Gwaii

The Queen Charlotte Islands, known as Haida Gwaii in the Haida language, is an archipelago made up of some 150 islands covering an area of approximately one million hectares (see map following page). Located off the mid-coast of British Columbia below the Alaska Panhandle, the Islands are the traditional home of the Haida First Nations. The estimated 1999 population of the QCI/HG is 5,808 people.[1]

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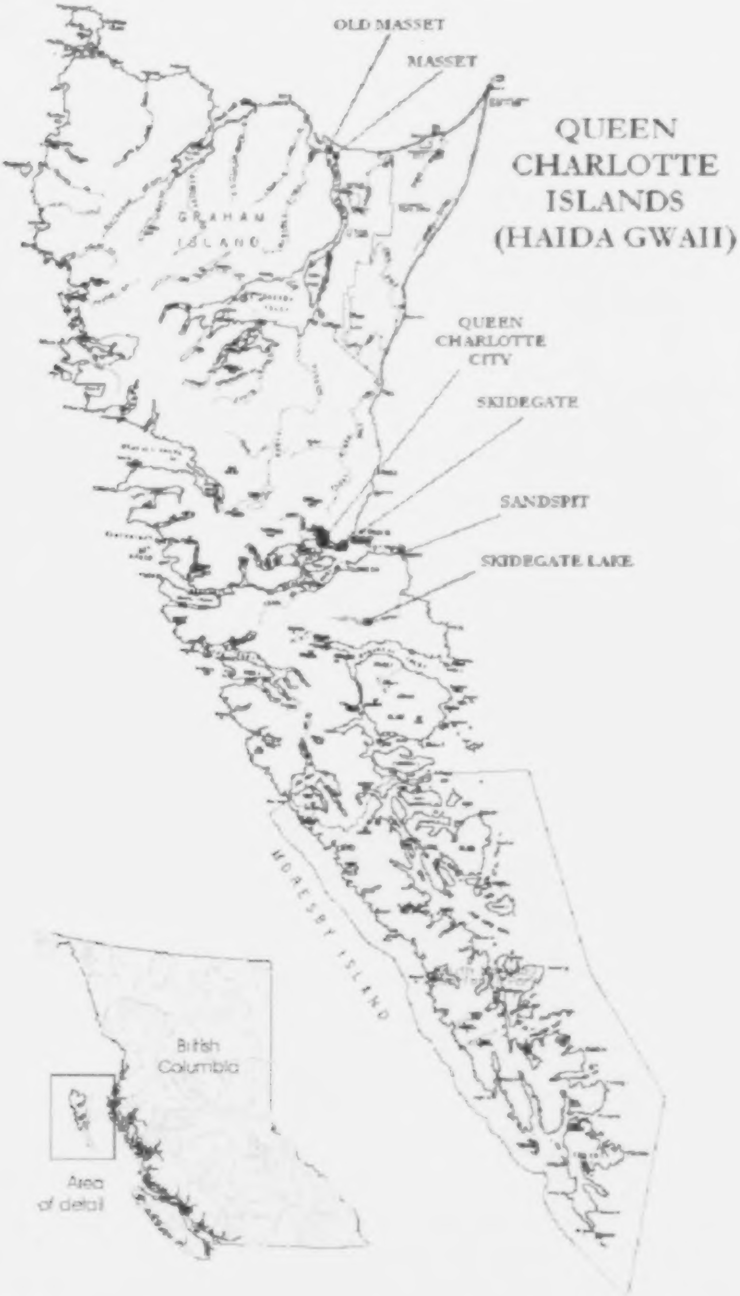
[1] BC Stats, Local Health Area population estimates.

Figure 1: Map of Queen Charlotte Islands / Haida Gwaii


OLD MASSET
MASSET
QUEEN CHARLOTTE ISLANDS (HAIDA GWAII)
GRAHAM ISLAND
QUEEN CHARLOTTE CITY
SKIDEGATE
SANDSPIT
SKIDEGATE LAKE
MORESBY ISLAND
British Columbia
Area of detail

The majority of the Island's population resides in seven communities located on Graham Island to the north and Moresby Island to the south. Masset and Old Masset, situated next to each other and located at the north end of Graham Island had a combined 1996 population of 1,985.[2] Port Clements, with a 1996 population of 558, and Tlell are located near the mid- to mid-west region of Graham Island. The Tlell and east coast area of Graham Island had a 1996 population of 369. Skidegate and Queen Charlotte City are located at the south end of Graham Island and had 1996 populations of 695 and 1,222, respectively. The main community on Moresby Island is Sandspit and is located at the Island's northeast end. In 1996, Sandspit had a population of 568. The population of QCI/HG is estimated to have declined marginally between 1996 and 1999, although the populations of Old Masset and Skidegate are reported to have increased.

The economy of the QCI/HG is comprised of an assortment of more mainstream economic sectors and more traditional and alternative economies. Forestry and fishing have played the largest role in the mainstream economy and have employed both on-Island and off-Island residents. Based on information from the 1996 Census of Canada, the leading employer on the Island is the public sector, which supports approximately 37% of the total on-Island labour force.[3] The next largest employer is logging and forest products manufacturing which supports close to 31% of the total labour force, followed by tourism at 14%, and fishing at just over 9%.

P2. An Introduction to Non-Timber Forest Products

The term non-timber forest product refers to a broad range of resources in the forest. Also known as botanical forest products or non-wood forest products, the terms generally describe any product in the forest, other than the trees used for the production of lumber and other solid wood products or pulp. While there are hundreds if not thousands of such products in the forest, just over 200 products are currently commercially harvested in British Columbia. The B.C. Ministry of Forests (de Geus, 1995) has grouped non-timber forest products into the following general categories:

- wild edible mushrooms, including pine and chanterelle mushrooms;
- floral and greenery products, such as salal, pine boughs and cedar foliage;
- medicinal and pharmaceutical products, such as Yew bark, mushrooms and herbs;
- wild berries and fruit, including huckleberries and salal berries;
- herb and vegetable products, such as fiddleheads and devil's club;
- landscaping products, such as shrubs and ornamental trees;
- craft products, made from wood, bark and other flora;
- miscellaneous botanical forest products, such as honey and smoke woods for example.

Additional products that could be added to the above list include eco-tourism and other services based on NTFPs (such as tours, workshops, training courses, health and beauty services), and the more intensive use of hunting by-products, or deer product resulting from culling activities.

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[2] 1996 Census of Canada. BCStats provided data for communities and rural areas.

[3] The 1996 Forest District Tables, Ministry of Finance and Corporate Relations, April 1999.

Other groupings have been made. For instance, the FAO (Food and Agriculture Organization of the United Nations) has defined the groups as follows:

- Food and nutrition such as mushrooms and berries;
- Fodder and Grazing;
- Cultural and Spiritual Values such as sacred groves, ceremonial use products;
- Local trade;
- Medicinal uses both for "natural" and "supernatural" diseases.

The latest research (Wills and Lipsey, 1999) on the non-timber forest products industry in B.C. indicates that the commercial harvest of mushroom and floral greenery products, much of which is exported, introduces over $100 million dollars per year into the provincial economy, depending on the productivity of the growing season. There are numerous other products not included in this figure; however Wills and Lipsey further estimate that, in 1997, direct corporate revenues of the various non-timber products were worth approximately $280 million.

The use of these products for commercial reasons reflects but one of the many forest values. Cultural and subsistence values, not to mention ecological values, have been an integral part of many communities and the use of many forest products has continued for centuries. Focussing on one set of values does not suggest that the others are any less important, or that they should not be included in any evaluation of the appropriate use of forest products.

This report will focus on the commercial use of non-timber forest products, but readers should be aware of linkages that exist not only among the various human uses of the forest, but also between our use and the health of the forest ecosystem.

P3. Overview of NTFPs on the Queen Charlotte Islands/Haida Gwaii

The Pacific Golden chanterelle (*Cantharellus formosus*) is the main NTFP harvested and exported from the QCI/HG. Other mushrooms commercially harvested include the King bolete (*Boletus edulis*) and the Blue chanterelle (*Polyozellus multiplex*), though these are harvested at a much lower volumes. Other mushrooms on the QCI/HG include the oyster mushroom (*Pleurotus ostreatus)* and chicken-of-the-woods (*Laetiporus sulphureus)*. Small quantities of pine mushrooms (*Tricholoma magnivelare)* have also been harvested in the QCI/HG.

There is currently little or no commercial harvest of salal (*Gualtheria shallon*) and while some individuals have attempted to ship salal off-island, shipping costs have generally defeated these efforts. Seed cones have been harvested in the past for silvicultural purposes, rather than the more common NTFP craft uses. In addition, there are a few cottage industries that make value-added products, such as crafts and carvings from driftwood, but these appear to be sold as private retail to tourists and not, in general, shipped off the islands. There has been at least one small-scale attempt at jam production from wild berries.

For the purposes of this study we categorise the key sectors pertinent to the QCI as:

- Mushrooms
- Floral
- Herbs
- Berries
- Craft
- Venison
- Medicinal/pharmaceutical
- Eco-tourism and knowledge based services

Some of the above categories overlap. For instance interpretive mushroom walks or traditional basket weaving courses could fall into two categories. Each of these is described in the sections that follow.

P4. Data collection methods

The quantitative and qualitative data used in this report were obtained via a number of sources. In Chapter 1, "Edible Wild Mushrooms," the edible wild mushroom data used to describe imports to the European Union are from the European statistical agency Eurostat. Edible wild mushroom data for BC and the United States are from Statistics Canada and the U.S. Department of Commerce. Data specific to the QCI/HG are based on anecdotal information from industry participants. Other information pertaining to basic characteristics of the wild mushroom industry are based on discussions with industry participants. There is no formal collection of NTFP harvest volume and value data at this time.

The information provided in Chapter 2 was obtained through a variety of published sources for NTFP and other products. They include Exploring Opportunities for Aboriginal Communities (Brubacher, August 1999) and Goods from the Woods (KWC Training), both of which are recommended as valuable resource material for more in depth study of the commercial aspects of the industry. Also see Pojar and MacKinnon (1994) for a description of the plants of coastal B.C. Other reports include Wills and Lipsey (1999), Mater Engineering (1993), and the Lee and Williams (1999) report prepared for the Ministry of Small Business, Tourism and Culture. Personal communications with several researchers, and with members of the various government agencies also were made. The research team made direct observations during its travels through the region and was assisted by many local residents who were helpful in providing suggestions and comments. We also had direct contact with many representatives of the retail and wholesale branches of the industry. Data collected was often anecdotal and no formalised methods were used.

The information provided in Chapters 3 and 4 outlining the community concerns and interests was gathered though a number of open houses, meetings with the Old Masset Band Council, the Skidegate Band Council, the Council of Haida Nation, Forest Service staff, and with many other residents of QCI/HG. An initial series of three open houses were held in August, 1999, in Queen Charlotte City, Masset, and Sandspit. Approximately 80 people attended the three meetings. At these meetings, the purpose of the study was discussed and the researchers sought information on NTFP business opportunities and concerns related to the use of NTFPs for commercial purposes. In December, 1999, a draft report was released for public comment, and in January, 2000, a second series of open houses were held in the same three locations, with approximately 68 people attending. Those attending the first open house sessions were substantially different than those attending the second series. The purpose of releasing the draft report was to obtain feedback on the opportunities suggested in the report and other concerns of the community.

While it is not the intent of this research project to present management or legislative recommendations, the NTFP industry and related community issues are intricately related to management of the land base. Numerous other regions are also dealing with the same or similar management issues, so to assist in the debate, a number of experiences from other jurisdictions are included in Chapter 5. A complete reference section with numerous additional readings is included at the end of the report.

Chapter 6, "The business of NTFPs" is a subjective overview of the business climate, restricting factors and opportunities based on the researcher's knowledge of the industry and observations made during the research period of the project. We emphasize that any commercial venture into the field of NTFPs must first address the issues surrounding sustainability, Haida and other community rights.

Chapter One: Edible Wild Mushrooms

1.1 Overview of the edible wild mushroom industry: an international context

From 1994 to 1998, British Columbia and the U.S. Pacific Northwest shipped an average of approximately 785,000 kilograms per year of wild and cultivated (called "fresh or chilled mushrooms" by Statistics Canada) to Europe and a further 1,041,200 kilograms per year to Japan.[4] The total declared value of these shipments approached CAN$28.7 million per year.[5] Shipments to Japan represent close to 76% of that value, or CAN$21.6 million. Tables 1 and 2 show the volumes and values of exports from North America to Europe. Volumes for British Columbia and the U.S. Pacific Northwest are combined to minimize the potential to underestimate the production from any one source, as some mushroom exporters ship their product via the United States, and vice versa. It should be noted that some mushroom exports may be classified under other miscellaneous food export categories, subsequently these figures may under-represent the total volume shipped. Estimates for shipments from Canada to Europe indicate that in 1999 the harvest was approximately 25% below average.

Table 1: Shipments of fresh or chilled mushrooms to Europe from British Columbia and the U.S. Pacific Northwest, 1994-1998 (kilograms, fresh weight).

	1994	1995	1996	1997	1998	Five year average
Volume (kilograms)	733,519	798,723	658,674	1,205,592	529,338	785,169

Source: Statistics Canada, U.S. Department of Commerce.

Table 2: Shipments of fresh or chilled mushrooms to Europe from British Columbia and the U.S. Pacific Northwest, 1994-1998, (current Canadian $).

	1994	1995	1996	1997	1998	Five year Average
Value, (current Can$)	6,951,074	8,344,086	6,825,000	8,643,151	4,557,879	7,064,238

Source: Statistics Canada, U.S. Department of Commerce.

North American exports represent a minor share of the total international trade in mushrooms. Exports from the U.S. Pacific Northwest and British Columbia account for an average of approximately 16% of the total Japanese market for pine, or matsutake mushrooms (*Tricoloma spp.*) (Wills and Lipsey, 1999). The pine mushroom has the highest value of any North American edible wild mushroom, but in Japan it is considered of lower quality, thus valued less than its Asian counterpart.

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[4] Statistics Canada, U.S. Department of Commerce. Data is reported under the Harmonized System (HS) code number 070951, Fresh or Chilled Mushrooms, and as such includes both wild and cultivated mushrooms.

[5] Declared value is the value given by export companies when reporting shipments to Canadian or U.S. authorities.

Exports to Europe from North America are also minor in terms of the overall supply to the European market. For example, Table 3 shows the total volume of fresh chanterelles (*Cantharellus spp.*) shipped to European Union countries in 1998, by region of origin. The North American contribution to this market is 2%. The total value of all shipments to the European Union was 58.6 million Euros, or CAD$106.24 million.[6] The average per kilogram value of chanterelle shipments from all sources was CAD$7.06, or $3.20 per pound.

Table 3: Shipments of chanterelle mushrooms to Europe Union countries, 1998.

	Eastern Europe[1]	Baltic States[2]	Former USSR[3]	European Union	Former Yugoslavia[4]	Turkey	North America	Total
Volume (kilograms)	5,640,000	3,500,000	3,150,000	1,200,000	900,000	375,000	275,000	15,040,000
Percent of total	37.5	23.0	21.0	8.0	6.0	2.5	2.0	

1. Eastern Europe suppliers include Poland, Romania and Bulgaria.
2. Lithuania accounted for approximately 86% of the total shipments from the Baltic states.
3. Suppliers include Belarus, Russian and the Ukraine.
4. The principal supplier is Serbia-Montenegro.

Source: Personal communication, Michel Courvoisier, Bio Markets Research, Oncy, France. courvoisier@wandoo.fr Data compiled from Eurostat.

Since 1995, new suppliers to the wild mushroom market, such as Belarus and Poland, have introduced additional less expensive supplies to the European market. It would be expected that these new supplies would have some effect on the North American market by increasing the overall European supply and lowering prices, even though the harvest in North America generally follows Europe's. Price and supply data for 1999, however, tend to indicate that there is some price independence from European market influence, as discussed below.

1.2 British Columbia's role in the mushroom industry

There are no definitive figures on the volume and value of specific edible wild mushrooms harvested and exported from British Columbia. While the data reflecting exports to Europe and Japan help, the figures do not capture the entire volume of mushroom shipments. Volumes shipped for consumption in the U.S. are increasing and some wild mushroom product may be shipped under other reporting categories, as previously mentioned. Estimates for the volume of chanterelles harvested range from 750,000 kilograms in a good year to a quarter of this figure in a poor year (Wills and Lipsey, 1999). For pine mushrooms, annual volume estimates range from 250,000 kilograms to 390,000 kilograms. A good fruiting year for king boletes (*Boletus edulis)* produces approximately 100,000 kilograms. A good year for chanterelles, or other mushroom does not necessarily indicate a good year for other mushrooms. British Columbia exports the vast majority of its edible wild mushrooms to Europe, Japan, and the United States.

Shipments of fresh mushrooms to Europe and Japan predominantly occur from August through December, which covers the normal fruiting season for pine mushrooms, king boletes and chanterelles. Shipments also occur near the end of spring during the morel harvest season. The exact timing, length of season and volumes harvested depend on the productivity of the growing season and area of the province. Statistics Canada data indicate that approximately 95% of the volume exported to Europe and 94% of its value is shipped from August to December, with the vast majority (>90%) shipped in September, October, and November. Approximately 87% of the volume exported to Japan and 96% of its value is shipped from August to December; over 90% of these shipments occur from September to November. The volume spikes at chanterelle and pine mushroom harvest times, as shown in Figure 2, suggest that the export data are heavily weighted by exports of the in-season edible wild mushrooms, thus providing reasonably accurate data for these products.

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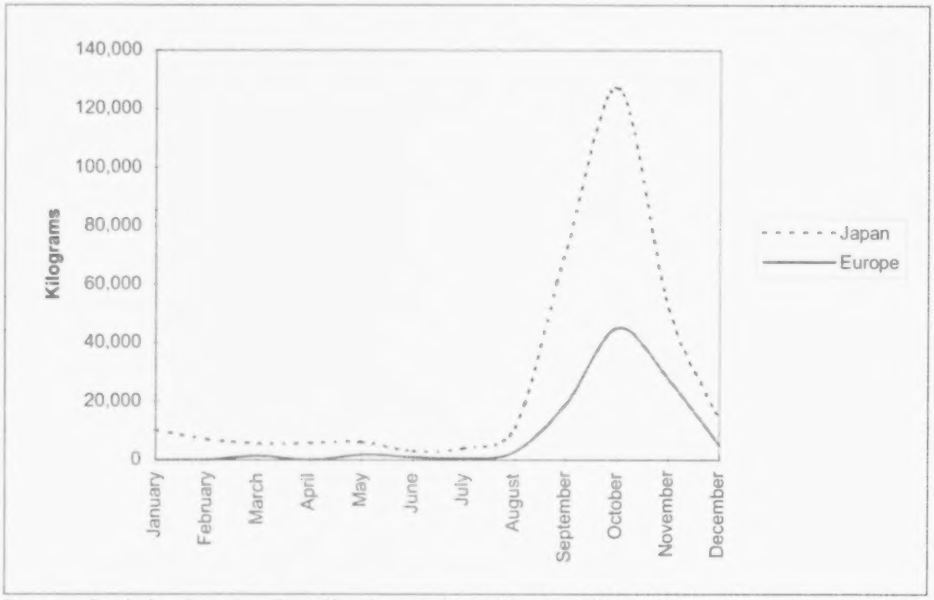
[6] Based on an exchange rate of 0.5516 Euros per Canadian dollar. Reflects the European wholesale value.

Figure 2: Wild or cultivated mushroom exports from British Columbia to Japan and Europe, annual average volumes, fresh weight in kilograms, 1990 - 1998.



Source: Statistics Canada. Canadian International Merchandise Trade, http://www.statcan.ca/trade/scripts/trade_search.cgi

Table 4 shows the average declared value, in current Canadian dollars, per kilogram of fresh or chilled mushrooms exported directly from British Columbia, and indicates the variation in average yearly mushroom prices. Average annual prices appear relatively stable; however, average monthly and daily prices can be much more variable. For example, the largest variation in a single season occurred in 1993 when the average monthly declared value of shipments to Japan ranged from a high of CAN$123.49 per kilogram to a low of $42.28 per kilogram. Usually, however, average monthly prices tend to range from $40.00 to $50.00. Shipments to Europe can also be volatile and double or halve, but generally range from approximately $14.00 to $20.00 per kilogram. Under this price variability, exporters run the risk of purchasing at one price, but having to sell at a lower price a few days later. Exporters are not able to withhold their product for a better price given the perishability of the mushroom product.

Table 4: Average declared value per kilogram of fresh or chilled mushroom exports from British Columbia to Europe and Japan, 1995 to 1999, in current CAN$/kg.

	1995	1996	1997	1998	1999	Average
Europe	15.22	15.21	14.02	16.12	19.40	15.99
Japan	34.56	41.19	30.14	35.14	39.43	36.10

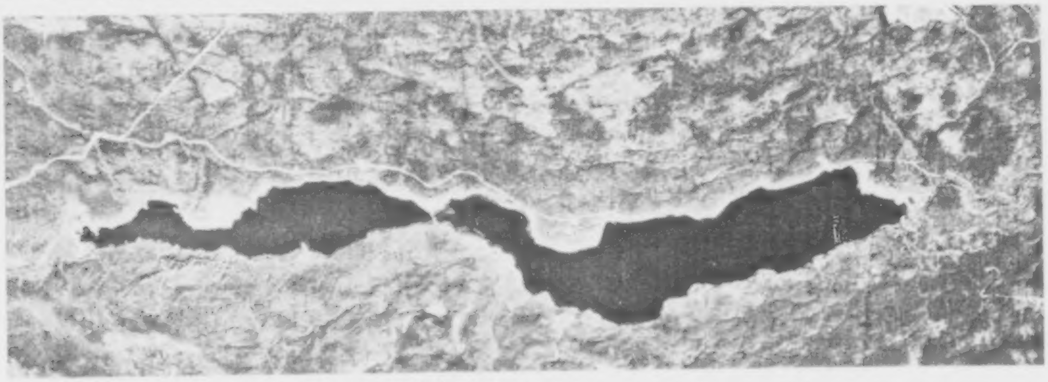
Source: Statistics Canada.

Exporters in B.C. report that the North American market is increasing in importance, both for its growth potential and also as an alternative to the increasingly competitive European market. Data for Canadian exports to the U.S. indicate that shipments of fresh or chilled mushrooms have increased by six or seven times over the last decade. However, this data, as reported under the Harmonized System, also includes cultivated mushrooms, consequently it cannot be used to infer changes in the shipment of wild mushrooms.

1.3 The Queen Charlotte Islands/Haida Gwaii mushroom industry

Edible wild mushrooms have been commercially harvested on the QCI/HG since the early 1980s, and have been exported predominantly to the European market. In most years, at least 90% of the mushrooms harvested are Pacific Golden chanterelles (*Cantharellus formosus*). Other species harvested less frequently and in smaller volumes are king boletes (*Boletus edulis*), blue chanterelles (*Polyozellus multiplex*), and chicken of the woods (*Laetiporus sulphureus)*, and occasionally pine mushrooms (T*richoloma magnivelare*). The majority of the mushroom picking activity centres on the Skidegate Lake area in the northern half of Moresby Island. Figure 3 is a photomap of the Skidegate Lake area, north being the top of the map. The lake is approximately nine kilometres long and the most productive mushroom habitat covers an area around the lake of about 5000 hectares.

Figure 3 Skidegate Lake, Moresby Island, Queen Charlotte Islands/Haida Gwaii, B.C.



Source: Queen Charlotte Islands Forest District.

During the 1980s, the only participants were a handful of local residents who established informal protocols in relation to harvesting areas and selling arrangements. At that time, prices for chanterelles were in the $1.00 to $2.00 per pound range. Since then, the European demand for chanterelles from British Columbia has increased sharply as have the prices received by pickers and the number of people interested in picking mushrooms. The future of the mushroom industry on the QCI/HG will depend on distributors' ability to continue receiving a premium price in Europe. Also important is the expansion into U.S. and other markets, and the accessibility to and continued productivity of current and future mushroom growing areas.

Chanterelle mushrooms from the QCI/HG currently command a premium price over other chanterelles from Europe and North America, which helps to ensure profitable sales and maintain above average picker wages. This price differential is due in part to QCI/HG chanterelle's deeper golden colour, stronger aroma, and timing of the harvest, which generally, though not always, falls between the end of the European season and the beginning of the season in the rest of British Columbia and the U.S. Pacific Northwest. The chanterelle species harvested in North America (*Cantharellus formosus* and less commonly *C. subalbidus*) are different than the specie commercially harvested in Europe (*C. cibarius*). How this species difference factors into the price of North American, and especially QCI/HG chanterelles is not yet well understood.

There are challenges to this premium price for QCI/HG chanterelle mushrooms, however. The QCI/HG advantage is competing against lower cost product from other North American sources such as Vancouver Island, and greater volumes of cheaper product from Turkey and Eastern Europe, the latter of which has enjoyed longer seasons recently. Compared to the European variety, many importers consider any North American chanterelle to be inferior, although this perception too is beginning to change with concern, justified or not, over radiation contaminated mushrooms from Eastern Europe. Regardless, the higher price needed to make the QCI/HG chanterelle mushroom industry profitable is becoming more difficult to obtain and exporters are promoting product from other areas that have lower supply costs. In the long run, the QCI/HG's premium price may change and affect not only profitability, but also picker wages.

1.3.1 Species harvested/available

In 1999, an unusually wide variety of mushrooms was available and buyers purchased king boletes, golden chanterelles, blue chanterelles, chicken of the woods, and even pine mushrooms. However, while the selection was good, the volume of chanterelles was very poor and the amount shipped each day was about one tenth of the usual volume in a more productive year. Many pickers began arriving in mid to late August; however, the commercial season did not start until buyers began purchasing at the beginning of September. The season continued for about seven weeks and ended in the middle of October. In contrast, the 1998 season started near the beginning of August and lasted through October.

1.3.2 Average volumes and values

Anecdotal estimates of the annual volume of chanterelles harvested on the QCI/HG tend to range from about 100,000 to 250,000 pounds (45,000 to 115,000 kilograms), and up to 350,000 pounds (160,000 kilograms) in an exceptional year.

In 1998, chanterelle production in the United States was very low, which led to a high level of importation of B.C. mushrooms. This increase in demand led to an increase in price and pickers earned from $2.50 to $4.50 per pound ($5.50 to $9.25 per kilogram), but prices went as high as $6.50 or $7.00 per pound ($14.30 to $15.45 per kilogram) for a short period. The season's timing is very important for the Islands. North American prices tend to be sensitive to the international supply and demand for mushrooms and a long European season will prolong the supply of cheaper mushrooms.

In a good producing year, the total value of the QCI/HG edible wild mushrooms at the picker level can be worth approximately $625,000 to $1,125,000, assuming an average harvest of 250,000 pounds and a price ranging from $2.50/pound to $4.50/pound. The potential export value to Europe, assuming an average price of $7.25/pound, or $15.99/kilogram (see Table 4), is $1.8 million. This value can easily range by plus or minus 40%.

In 1999, the chanterelle season was very unproductive, but the volume of king boletes harvested was above average and considered the best in five years. Total volumes of approximately 1,000 to 1,500 pounds were shipped daily to Vancouver and the total volume shipped during the season was approximately 45,000 to 67,000 pounds (20,000 to 35,000 kilograms). Prices paid to pickers on the QCI/HG remained above average (in terms of past prices and also prices elsewhere in the province) for the majority of the 1999 season. The European harvest, notably Poland, lasted well into November this year, which can infer that this year's premium likely reflects the greater local scarcity of the mushrooms, and also the dry weather which delayed the chanterelles on Vancouver Island.

The availability of king boletes made the year worthwhile for many pickers. In early September, king boletes were the main species harvested and pickers received $8 per pound; that price dropped to $4 per pound when the quality of king boletes dropped and by the fourth week of September buyers were purchasing few if any king boletes. An estimated 10,000 to 15,000 pounds of king boletes were harvested from the QCI/HG in 1999.

By mid-September, the harvest of chanterelles had overtaken the daily volume of king boletes purchased. In September, pickers averaged approximately $4.50 to $5.00 per pound for chanterelles. Prices peaked at the end of September reaching $7.50 per pound on September 30 before falling to $4.50 per pound two days later. By the middle of October prices had fallen to $3.00 per pound.

A crude estimate of the total value of the QCI harvest at the picker level is approximately CAN$225,000 to $350,000, based on a harvest of 45,000 to 67,000 pounds and average prices of $4.50 per pound for chanterelles and $8.00 per pound for king boletes. Given that approximately 60 people were actively picking, if all shared in the income each would have earned from $3,750 to $5,800.[7] Abilities and local knowledge play a significant part in the volumes picked and some pickers likely earned far less than the average wage suggested above. Total commissions paid to buyer agents would have been in the $25,000 range.

In 1999, wholesale prices in Europe ranged from approximately CAN$15.00/kilogram ($6.80/lb) to $22.00/kilogram ($10.00/lb) by the end of November, after supplies from Poland declined. The average declared price of exports to Europe during the 1999 season was $19.40/kilogram ($8.80/pound). The total 1999 value of the QCI/HG wild mushroom harvest would be somewhere in the range of $400,000 to $600,000.

One of the most significant characteristics of the 1999 chanterelle season was not only the low volumes in North America, but also the unusually long season in Poland. In a normal year, the Polish season would end no later than the middle of September. In 1999, weather conditions were such that Poland supplied chanterelles to the European market up to the middle of November, which would have been expected to put downward pressure on North American prices. However, the average declared price for B.C. exports to Europe in 1999 was the highest in five years, which would be consistent with a lower than average harvest. This suggests that the price paid for B.C. chanterelles, and perhaps all North American chanterelles, is somewhat independent of supply variations from European countries.

1.3.3 Buying and distribution system

There are generally five to eight companies that locate mushroom buyers in the QCI/HG. There are usually about 10 field buyers and each company will have a buying station at Skidegate Lake and some will also have agents on Graham Island. Buyers generally receive $0.50/pound to act as company agent.

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[7] Note that these are crude calculations made by the researcher based on anecdotal information and limited data, therefore these incomes should not be considered illustrative of any individual.

Mushrooms are shipped from the QCI/HG to Vancouver either by air or land. The maximum shipping time from the Islands to Vancouver is three days (via reefer) and the mushrooms lose anywhere from five to 10 percent of their weight due to moisture loss. Once the mushrooms reach Vancouver they are kept in cold storage, sorted, and then shipped to their final destination within three to five days. Distribution losses include sorting, which removes any poor quality mushrooms, and further moisture losses from Vancouver to Europe, which can be anywhere from three to seven percent, depending on the original moisture content. The exporter's margins must be adjusted by the sorting and moisture loss factor to reflect actual returns to their initial cash outlay.

For exports to the European market, most companies indicated that because of the risk associated with a lack of firm sales contracts and method of payment, a long-term relationship with European purchasers is essential. While the number of companies purchasing edible wild mushrooms in Europe has grown and would increase competition for the mushrooms, shipping to these new entrants has an added risk, thus exporters and importers are more likely to continue to rely on old and trusted connections.

The majority of the activity continues to concentrate on Moresby Island at Skidegate Lake, which has several advantages over other areas, such as proximity to the airport, appropriate age of trees, concentration of product, and accessibility for pickers. In 1999, there were seven buying stations in the Skidegate Lake area. On Graham Island, the harvesting and purchase of mushrooms is not concentrated in one area, as it is on Moresby Island, and four buying stations were spread around Port Clements and Queen Charlotte City. The low volumes in 1999 allowed all shipments to go via air cargo.

1.3.4 Harvest labour

Depending on the productivity of the mushroom season, as many as 300 people, about two-thirds of which are from off-Island, arrive at various times and locations to harvest chanterelles and other mushrooms on the QCI/HG. The mushroom labour force is comprised of experienced pickers and many more inexperienced pickers. For the inexperienced, mushroom buyers tend to be the source of advice and training, although unlike the pine mushroom harvest, chanterelle pickers are far more cooperative within their own community and information tends to pass relatively freely. Buying stations will generally have pictures of which species to harvest and are sources of information about where to go, or at least where not to go. Of course it is in the buyer's interest to educate the pickers, not only as a means to help them become more productive, but also to engender an allegiance to the particular buyer or buying station. Little information is available on the average incomes earned by pickers, but there is a wide range in earnings due to the wide range in the ability and knowledge of the pickers.

The presence of an adequate labour force appears to be a function of the mushroom supply and flow of information. The information network among the picking population throughout the province tends to help limit the arrival of pickers during low productivity seasons, and undoubtedly attracts more pickers during high volume seasons.

Generally, the majority of pickers on Graham Island have been local residents and this remained true for the 1999 season. At Skidegate Lake on Moresby Island, the picking community was much smaller in 1999 than the numbers reported in previous years. Estimates from buyers suggest that the number of pickers varied from 30 to 60 in 1999. There is no official registry or other form of accounting for the number of people who pick mushrooms each year, and as a result the number of pickers is an estimate.

Anecdotal information suggests that daily incomes ranged from as little as $25 to $30 to a high between $200 to $300. This variation in income levels could easily occur for different individuals on the same day. While the luck of walking into a prime field of mushrooms was one reason for the difference, other reasons include local knowledge, access to a vehicle, understanding the topography and forest cover, and plain hard work and long hours. It is apparent that one picker's daily income could easily be another's weekly income.
It is impossible to estimate the number of people who could potentially be employed if the goal were to optimize the mushroom harvest. Currently, buyers will purchase as many chanterelles as pickers can harvest; however, it is likely that the general increase in the number of pickers over the last decade has lowered the income potential for many.[8] If more people were to pick mushrooms, new harvest areas may be necessary to ensure an adequate supply and earning potential, and to avoid conflicts among competing pickers. As for research to determine the productivity of chanterelles, in 1999, SMFRA funded a study by Petersen, Outerbridge and Dennis (2000) that examined the productivity of chanterelle mushrooms on burned and unburned sites. This was the first such study on the QCI/HG, yet more research is required to understand the relationship between total mushroom productivity and the commercial harvest.

1.3.5 Data from research picker

Table 5 is the record of a two-person picking group for one week during the 1999 season. It illustrates the variability in daily volumes and average per hour wage. The average wage earned over the week was $10.90 per hour per person. However, the lower wages earned in the first two or three days is the result of inexperience and a higher average wage would likely result as the level of experience increases. The weight refers to pounds of chanterelle mushrooms weighed at the buying station, unless otherwise indicated. The total value received is the combined earnings of both harvesters, but the hourly wage is on an individual basis.

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[8] The average number of pickers has increased in the last 10 years and anecdotal reports suggest it now takes more time to harvest a given volume.

Table 5: Record of wages based on volume and weight of mushrooms harvested at Skidegate Lake, Moresby Island, September, 1999.

	Time (hours)	Volume*	Fresh weight (pounds)**	Total Value (Cdn $)	$/hour (per person)	Weather conditions
Sat. Day 1	5	0.5 buck.	3 chants. 3 boletes 12 chicken	40.00	4.00	dry
Sun. Day 2	6	1.25 buck.	17	70.00	5.80	dry
Mon. Day 3	10.5	2 buck. 2 lge bask.	41	205.00	9.30	dry
Tues. Day 4	0					
Wed. Day 5	7	2 buck. 1 lge bask.	46	230.00	18.60	very wet
Thurs. Day 6	3	0.5 buck.	8.5	43.00	7.00	wet
Fri. Day 7	8	1 lge bask. 5 s. bask.	50	275.00	17.00	wet
Sat. Day 8	8	5 s. bask.	42	235.00	14.70	wet
Average	6.8	na	31.8	156.9	10.90	na

*Volume given in either buckets (buck.) or small or large baskets (s. bask. / lge. bask.)

** Weight for chanterelles unless otherwise noted.

Source: Pers. com. Wendy Cocksedge.

Table 6 shows the daily prices paid to pickers by species from September 18 to 25. Where no price is given, the species was no longer being purchased. The price for boletes was $8 per pound for two weeks prior to the start of the week shown below.

Table 6: Prices per unit received by pickers, September 18 to 25, based on Canadian dollars per pound.

	Sat. 18th	Sun. 19th	Mon. 20th	Tues. 21st	Wed. 22nd	Thurs.23rd	Fri. 24th	Sat. 25th
Chanterelles	4.00	4.00	5.00	5.00	5.00	5.00	5.25	5.50
Boletes								
Grade 1	4.00	4.00	4.00	-	-	-	-	-
Grade 2	1.00	1.00	1.00					
Chicken of the Woods	2.00	2.00	-	-	-	-	-	-
Pine mushrooms								
Grade 1	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
Grade 2	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00
Grade 3	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00
Grade 4	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00

Source: Pers. com. Wendy Cocksedge.

1.4 *Marketing characteristics of the QCI/HG mushroom industry*

The information and data in the previous paragraphs provide some useful information about the mushroom industry. Four characteristics of the industry are worth highlighting:

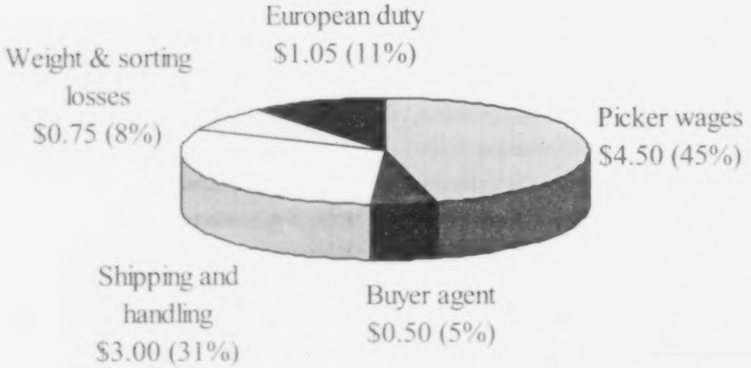
1. the importance of receiving a premium price;
2. the effect of productivity and timing;
3. the costs of bringing the product to market; and
4. the uncertainty of the European market.

Prices vary widely in this industry and the average price based on European import data suggests that North American wild mushrooms receive a premium over European mushrooms. Newer entrants to the European market, such as the Baltic states and other former Soviet bloc states can provide mushrooms at a lower cost, due to lower transportation and labour costs. As a result, any quality difference and the season's timing become even more important to North American suppliers.

The price paid in France for Polish chanterelles in July, 1999, was 40 French Francs per kilogram, or CAN$ 9.25 per kilogram ($4.20/pound) and North American mushrooms averaged approximately CAN$15 to $22 per kilogram ($6.80 to $10.00/pound) from September to November. North American chanterelles, especially from the QCI/Haida Gwaii, must earn a premium over the European product because of the labour, shipping and handling costs. The cost of bringing the product to market includes the following: shipping charges from the Islands to Europe of approximately $1.50 to $1.80 per pound ($3.50 to $4.00 per kilogram), plus freight forwarding and handling charges; harvesting costs averaging $2.50 to $4.50 per pound ($5 to $10 per kilogram); average weight and sorting losses of 10 to 20%, and European import duties of 12% (results in overall cost share of 10-11%). Figure 4 shows the average costs per pound associated with the chanterelle's journey to Europe, including some of the factors, such as moisture loss and import duties.

To cover the costs of bringing the product to market, under the example above an exporter would have to be able to sell the chanterelles in Europe for no less than approximately $9.80 per pound, or $21.61 per kilogram. As is evident from this example, profit margins are not guaranteed and pickers tend to reap the highest proportion of the value. Note that this discussion is based on average values and some variation will result.

Figure 4: Average per pound costs related to shipping chanterelles to Europe.



Total cost = $9.80

For the QCI/HG, the chanterelle industry could not function profitably without earning a premium price in Europe. This condition is even more acute given the labour costs on the QCI/HG. During the 1999 season, the price paid to pickers ranged from $4.00 to $5.00 per pound ($8.80 to $11.00 per kilogram) and went as high as $7.50 per pound ($16.54 per kilogram), while prices on Vancouver Island ranged from $2.00 to $2.50 per pound ($4.40 to $5.50 per kilogram). As a result of these cost pressures and supply concerns, some exporters are shifting their operations away from the QCI/HG.

Exporters have said that the higher price for QCI/HG mushrooms is becoming more difficult to obtain and has less to do with the quality of the mushrooms versus other North American and European chanterelles as it does with the timing of the harvest. In fact, the competitive advantage resulting from the perceived quality difference may be disappearing. Chanterelle harvesting begins in Bulgaria in May and progresses through Eastern Europe through August and periodically into September, although this is not always the case as illustrated by the 1999 Polish season which lasted well into November. The chanterelle harvest in North America begins in August or September on the QCI/HG, and progresses south through Vancouver Island and into the U.S. Pacific Northwest. The premium price received for QCI/HG chanterelles is dependent on the productivity and timing of the North American and European harvest, although 1999 data indicate that the influence of European supplies may be less than first thought.

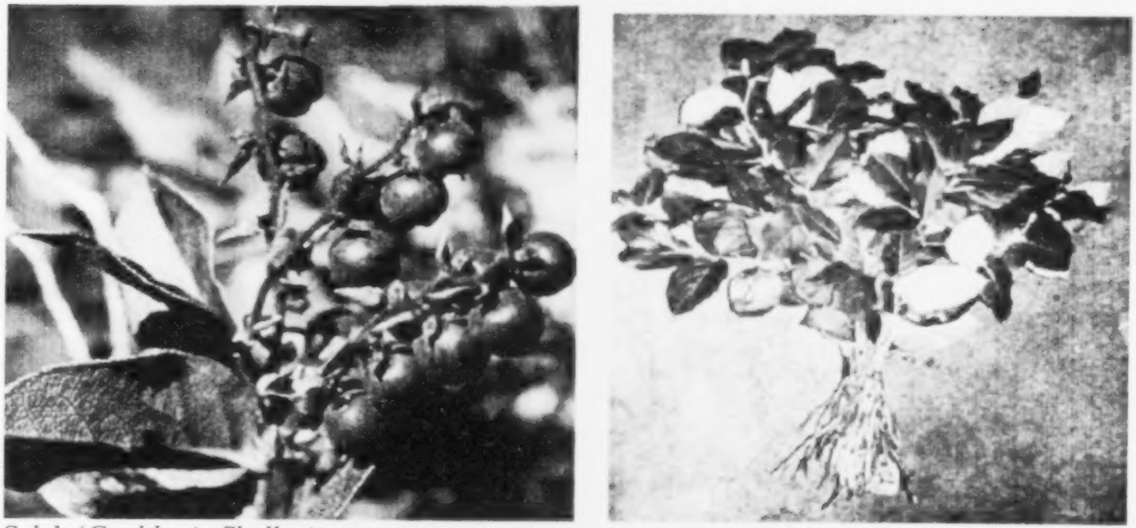
For North American distributors and exporters, the uncertainty associated with the European market stems not only from supply and demand issues, but also from the lack of firm purchase contracts, and because contracts are generally not prepaid. Some of the industry operates on the speculation that buyers will be located and contracts kept; this is not always the case and long term relationships between buyer and seller are nurtured and help to reduce the high risk. Many exporters are turning to other markets, such as within North America, to help diversify their risk.

1.5 List of North West Edible Mushrooms with Commercial potential

The following is a list of edible wild mushroom that have commercial value and is presented simply as a guide for potential harvesters.

Latin name	Common name
Agaricus silvaticus	Woodland agaricus
Armillaria ostoyae	Honey mushroom
Boletus edulis	King bolete
Cantharellus formosus	Golden chanterelle
Cantharellus subalbidus	White chanterelle
Polyozellus multiplex	Blue chanterelle
Cantharellus infundibuliformis	Funnel chanterelle
Hericium abietis	Coral tooth mushroom
Hydnum repandum	Hedgehog mushroom
Hypomyces cf lactifluorum	Lobster mushroom
Laccaria laccata	Common laccaria
Lactarius deliciosus	Delicious milk cap
Laetiporus sulphureus	Chicken of the woods
Lepiota rhacodes	Shaggy parasol
Pleurocybella porrigens	Angels wings
Pleurotus ostreatus	Oyster mushroom
Russula xerampelina	Shrimp mushroom
Sparassis radicata	Cauliflower mushroom
Tricholoma magnivelare	Pine mushroom

Chapter Two: Other Non-Timber Forest Products



Salal *(Gaultheria Shallon)*

The purpose of this chapter is to list many of the non-timber forest products that are currently being sold within North America and Europe. Prices for many of these products are also provided. In some cases, the products listed below may not be relevant to the QCI/HG, but are illustrative of the range of values that could be obtained for different types of NTFPs.

It is important to note that the products listed here are already being harvested and marketed throughout North America. Product development has not occurred and may not be possible on the QCI/HG for a number of reasons, which are discussed in Chapter 6. The lists of species, value-added products and services contained in this report is by no means exhaustive, but provides an indication of the opportunities that may be considered by the QCI/HG and a basis for further research and development.

We also encourage the community to become involved in the NTFP industry to not only ensure that the QCI/HG community reaps some of the benefits from the use of these products, but also to ensure they are harvested appropriately and in a manner consistent with the communities' desires.

The chapter begins with a short overview of the NTFP industry in B.C., followed by a list of several species of plants that are currently being marketed in North America, but not necessarily from the QCI/HG. This is followed by a more specific discussion of a variety of NTFP categories, including the products in greatest demand and prices paid at the picker, wholesale, or retail level.

It must be stressed that no sustainability assessment, environmental impact or inventory mapping has been carried out as part of this report. We therefore caution that these MUST be done prior to large-scale commercial exploitation of these items. In addition First Nation and other property rights issues need to be clarified.

2.1 Overview

In the most recent and comprehensive survey of NTFP potential in B.C., Wills and Lipsey (1999) identify current volumes and values of existing productions and recommend some strategic directions for the industry in B.C. They estimate that NTFPs currently generate approximately $280 million in direct sales within B.C. Wild food mushrooms and floral greens account for a major share ($100+million) of this contribution. This figure compares with the various components of the agricultural crops sector, which had 1998 farm cash receipts of $158 million for fruit production and $188 million for vegetable production (BC Stats). Total agricultural production in 1998 was worth approximately $1.8 billion. In contrast, the value of shipments in the wood products sector alone was $12.2 billion in 1998.

Given the diversity in NTFP products, there is great variability in the values and growth trends in different product groups. Some indication of values, however, is as follows:

Product Group	Annual Value
Herbal Medicines (internationally) (includes wildcrafted and cultivated species)	$12.4 billion (US$) (KWC Training, 1998)
Herbal Medicines (Canada)	$1.8 billion (C $) (Dr. A. McCutcheon, pers.com)
Nutraceutical and Medicinal mushrooms(international)	$1.3 billion (US$) (Wills & Lipsey, 1999)
Wildcrafted medicinal herbs (BC)	$2-3 million (Wills & Lipsey, 1999)
Pine Mushrooms (BC)	$45-55 million (Wills & Lipsey, 1999)
Salal (B.C., mainly Vancouver Island)	$55-60 million (KWC Training, 1998)
Ferns (BC)	$2-5 million (Wills & Lipsey, 1999)

Eco-tourism, which offers many opportunities for developing NTFP-related services, contributed more than $165 million (CDN) in direct revenues to the BC economy in 1997.

It is estimated that the US nutraceutical market has increased by an average of 14% per year over the past 3 years (Wills and Lipsey, 1999).

In the case of preserved and fresh floral products, Mater (1997) observes that sales of preserved trees (for interior decoration) increased in the US by 65% (1992 over 1991).

Demand for native plants for landscaping has grown so rapidly in the Pacific Northwest that some nurseries have two-three year waiting lists to supply customers with species such as salal, Oregon grape, huckleberry and bear grass (Mater, 1997).

Many communities and individuals are showing an increasing interest in participating in the development of NTFPs for commercial use. Any purchaser of products is looking for not only a price that enables resale at a profit, but also a consistency of quality and guarantee of supply. Without these three ingredients it would be difficult to establish a market for the particular product the community or individual may have an interest in developing.

The ability to add value prior to shipment is, in many cases, not a complicated process. This added value for example by preserving salal through a glycerin dip process or pre-assembling a "QCI/HG" potpourri mix for use by craft stores are two methods of reducing the transportation disadvantage.

2.2 Subsistence, ceremonial and small-scale commercial activities

From time to time limited test marketing of salal, berries and other NTFP products have been attempted but in general there has been very little if any continuous commercial exploitation. The high price of off-island transportation has been given as a reason.

Presently the Haida use certain NTFPs for cultural and traditional purposes as well as for supplemental food. There is some harvesting of bark for basket weaving, ceremonial dress and small-scale commercial activities. Certain medicinal NTFPs are likely traded for spiritual and ceremonial practices. As noted earlier, many Islanders rely on the annual harvest of berries, mainly for personal and family use.

2.3 Species availability

The QCI /HG covers an area of approximately 1,000,000 hectares, mainly within the Coastal Western Hemlock (CWH) Biogeoclimatic Zone. We have not completed an initial identification of likely commercial species, including fungi, in this zone as it is outside the scope of this report. Frederickson (1999) has, however, compiled a preliminary list for the zone based on known species with commercial uses in British Columbia. It is recommended, however, that prior to adopting a harvesting plan for NTFPs in the QCI/HG, the sustainability of species and ecosystems be assessed through detailed research. Methods to improve vegetation management in co-existence with other tenure holders also require further research.

The following are lists of commercially viable NTFPs found within the Coastal Western Hemlock Biogeoclimatic Zone (Frederickson, 1999). These products are harvested commercially within B.C., but inclusion of species on this list does not imply abundance, commercial viability, or any lack of concern over ecological impacts of harvesting.

Fruit and berry species

Amelanchier alnifolia	Saskatoon berry
Arctostaphylos uva-ursi	Kinnikinnick
Ribes laxiflorum	Trailing currant
Rubus idaeus	Red raspberry
Rubus parviflorus	Thimbleberry
Rubus spectabilis	Salmonberry
Rubus ursinus	Trailing blackberry
Sambucus racemosa	Red elderberry
Vaccinium alaskaense	Alaskan blueberry
Vaccinium caespitosum	Dwarf blueberry
Vaccinium parvifolium	Red huckleberry
Vaccinium uliginosum	Bog blueberry
Viburnum edule	High-bush cranberry

Craft species (carving, weaving)

Alnus rubra	Red alder
Carex obnupta	Slough sedge
Chamaecyparis nootkatensis	Yellow cedar
Chenopodium album	Lamb's-quarters
Cornus stolonifera	Red-osier dogwood
Tsuga mertensiana	Mountain hemlock

Floral species

Anaphalis margaritacea	Pearly everlasting
Empetrum nigrum	Crowberry
Malus fusca	Wild crabapple
Oxycoccus oxycoccos	Bog cranberry

Greenery species

Adiantum pedatum	Maidenhair fern
Asplenium viride	Green spleenwort
Blechnum spicant	Deer fern
Gaultheria shallon	Salal
Hylocomium splendens	Step moss
Kindbergia oregana	Oregon beaked moss
Pinus contorta	Lodgepole pine
Rhytidiadelphus loreus	Lanky moss
Sphagnum spp.	Peat moss

Landscape species

Achillea millefolium	Yarrow
Aquilegia formosa	Red columbine
Carex livida	Pale sedge
Cornus canadensis	Bunchberry
Dodecatheon pulchellum	Few flowered shooting star
Drosera rotundifolia	Round leafed sundew
Equistetum hyemale	Scouring rush
Juniperus communis	Common juniper
Kalmia microphylla ssp. occidentalis	Western bog-laurel
Lycopodium clavatum	Running clubmoss
Lycopodium sitchense	Sitka clubmoss
Polypodium glycyrrhiza	Licorice fern
Symphoricarpos albus	Common snowberrry
Viola adunca	Early blue violet
Viola palustris	Marsh violet

Medicinal species

Digitalis purpurea	Foxglove
Esquisetum arvense	Horsetail
Gentiana douglasiana	Swamp gentian
Populus balsamifera	Black cottonwood
Salix spp	Willow
Sorbus sitchensis	Sitka mountain-ash
Taxus brevifolia	Western yew
Veratrum viride	False hellebore

Fogarty (pers.com. 1999) provides this list of local Nutraceutical and Medicinal Mushroom Species.

Auricularia auricula	Wood ear
Boletus zelleri	Zeller's bolete
Boletus mirabilis	Velvet top
Fomes fomentarius	Tinder polypore
Fomitopsis pinicola	Red belt conk
Ganoderma applanatum	Artist's conk
Ganoderma oregonense	Varnish shelf
Ganoderma tsugae	Hemlock varnish shelf
Gloeophyllum sepiarium	Gilled polypore
Laetiporus sulphureus	Chicken of the woods
Lenzites betulina	Gilled polypore
Phellinus igniarius	Fleck-fleshed polypore
Schizophyllum commune	Split gill
Trametes versicolor	Turkey tail
Tremella spp.	Witches butter

2.4 Non-timber forest product categories

2.4.1 Floral and decorative greenery products

In B.C., it is estimated that annual salal exports may exceed those of mushrooms. Both the forest industry and others have assured us that the quantity of salal on the QCI/HG is extensive. However it has not been exported because of high transportation costs, or lack of sufficient volume or coordination. Various methods, many of which use glycerin, are now available to preserve floral greenery, thereby adding significant extra value to the product.

Christmas greenery such as boughs and wreaths are a major industry in the US (US$10 million in Minnesota alone); however, very little seems to originate from BC except for local use. In addition, there is a growing market in the U.S. for treetops, which are used in the manufacture of artificial trees using silk leaves (Brubacher, 1999). These artificial "trees" with silk foliage are a low maintenance alternative and are often used in malls and large office blocks to replace real plants. Opportunities may exist to cooperate with timber harvesters and the Forest Service to determine an appropriate volume of material that could be removed from the layer of course woody debris left behind in logging operations.

Other foliage used in the floral industry such as sword fern also exists in some quantity on the QCI/HG. The floral industry is always on the lookout for "new" and interesting products such as branches with dried berries attached or other interesting features (such as colouration or buds). While less sustainable than the previous examples, mosses and lichens are used extensively in floral arrangements, wreaths, potpourri and for interior decorative purposes. However, there is concern over the potential environmental damage to the forest floor, as has happened in some areas of the Pacific Northwest. Small bags of "reindeer moss" (a misnamed lichen) imported from Toronto for sale in Vancouver retail outlets sell for $9.50 per bag. Styrofoam balls covered with lichen sell in high-end florists for $4.50 each.

2.4.2 Landscaping

During our visit we noticed that QCI/HG has several areas in which so-called natural "Bonsai" trees grow (as a result of nutrient deficiencies and other factors that result in natural dwarfing of the plant). In attempting to find out whether anybody was currently commercially exploiting this resource we were given names of persons to contact who were exporting Bonsai. We did not receive a response through our attempts to contact those involved. We are concerned that an unmanaged and potentially damaging harvest of this product may currently be underway.

2.4.3 Berries and other foods

The Gwaii Trust Society webpage (http://www.gwaiitrust.com, 1999) notes that:

> The Haida first proved the agricultural potential of the Islands. Today, there are a limited number of farms and a few market gardens. Most of these businesses are on the eastern coast of Graham Island and all are small scale by the standards of industrial agriculture. The average annual income from agricultural products is low and most farmers supplement these earnings with other work.

Some of the edible wild berries known to occur in the QCI/Haida Gwaii region are salal berries, both red and black huckleberries, blueberries, high-bush and bog cranberries. Edible ferns, "sea asparagus", mint and other lesser-known foods are also available.

As discussed elsewhere in this report, berries and other forest foods formed a crucial part of the Haida' and early settlers' survival. The Haida traditionally and still actively harvest berries for their own use with many families having their own picking areas.

During our stay in the QCI/Haida Gwaii we noted that few if any of the food retailers carried local berries in their stores. When questioned as to why this was so, they responded that they were forced to import commercially grown product because there was no assured supply of local product. Other people told us that such products would not sell, as they were readily available to pick for free. We also noted that restaurants and hotels served this imported product to their off-island guests.

Farm grown cranberries were previously grown on the QCI/HG. Several areas on the mainland close to Prince Rupert are currently being considered as potential sites for cranberry farms, as land in the Vancouver/Richmond area has become too expensive. See Chapter 5 for our comments in this area.

2.4.4 Culinary herbs and aromatics

Mint is readily available on the QCI/Haida Gwaii. We were unaware of it being collected for sale through the local food retailers.

Potpourri containing a blend of QCI/Haida Gwaii products could find a ready market. Ingredients should be selected to provide a pleasing fragrance and when blended with essential oils could include dried berries, cones, moss, mint and other local products.

The production of essential oils from cedar and other species may also be a viable value-added opportunity for the QCI/HG.

2.4.5 Craft materials

The Gwaii Trust (web page, 1999) notes that:

"Approximately 20% of our population is involved in some form of 'art' making. One of the more important things about art is that it contributes to the quality of life."

The Haida First Nation has a long tradition of producing superbly crafted products such as baskets, cedar weavings and art from forest based resources. In addition QCI/HG supports a flourishing non-First Nation artists community. Much of the entrepreneurial community on the QCI/HG is in fact composed of independent artists and artisans. The production and marketing challenges of several NTFPs are similar to those faced by craftspeople and artists (small niche markets, need for differentiation and high value per quantity). There may be many linkages that could be made in production, packaging, "branding," marketing and distribution of arts and crafts, together with gourmet foods, personal care products, aromatics, and other high-price, low volume products. The potential for joint or co-operative marketing of arts, crafts, artistic performances (e.g., dance), and NTFPs should be explored as a way of building on the image and reputation of the Islands.

2.4.6 Venison

Deer is an introduced species to the QCI/HG. The lack of predators (except human) has meant that the population has increased dramatically with estimates as to the number of deer on the QCI/HG ranging from a low of 40-50,000 to a high of 500,000. No systematic population count has been undertaken to date. Deer are considered to have very significant impacts on Island ecosystems. The current hunting permit system allows each hunter with a license to take up to 10 deer per annum. From 1990 to 1998, an average of 1,280 deer were killed annually[9]. These numbers do not include Haida harvest, and unreported harvesting "without tags." Venison is clearly an important source of meat for Island residents.

Other researchers are examining deer management issues in the QCI/HG, including the idea of commercial sale of wild deer meat products, which is currently regulated under the BC Wildlife Act. We were advised of both support for and resistance to this proposition. The sale of non-edible portions (hides, hooves, antlers, bones) of wild deer is legal, if the animals have been harvested legally (Hayden, pers.com., December, 1999). Government authorities are likely to have a number of concerns about a proposal to use wild deer meat, even if it is produced as a by-product of a program to control Island populations. These concerns include lack of provision for inspection of the meat and the potential for "laundering" poached animals through a venture using legally harvested animals. The provincial government also has a general policy stance against the commercial use of wild animals; this position extends to a prohibition on farming of indigenous species (Hayden, pers.com., December, 1999). Such farms are permitted in several other provinces, including Alberta and Saskatchewan. Gwaii Trust (web page, 1999) reports a local recommendation to "[e]ncourage game farming using local deer." It should be emphasized that harvest of wild deer and game farming are two distinctly different activities.

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[9] Data provided by Sean Sharpe, Ministry of Environment Lands and Parks, Smithers.

If there were strong community support, a pilot project to use wild deer for commercial purposes as part of a deer management strategy might be worth submitting to the Director of the Wildlife Branch, Ministry of Environment, Lands and Parks. The unique situation of the Islands would need to be stressed (isolated area, introduction of alien species, ecosystem impacts) as would the comparative ease of monitoring harvest and sale, given the geographic isolation and limited transportation links. As background information, prices of farmed (fallow deer) products are provided in section 2.5.4.

2.4.7 Medicinals and pharmaceuticals

Nutraceutical and medicinal mushrooms were identified as one of B.C.'s "best economic bets" (Wills and Lipsey, 1999). The 1997 world market for these was estimated at US $1.3 billion and growing at 33 percent annually.

Medicinal plants and mushrooms are rapidly being incorporated into herbal remedies, immune boosting nutraceuticals and other health products. British Columbia's medicinal fungi include Asian species used for centuries in traditional eastern medicine for the treatment of specific illnesses and immune stimulation. BC's coastal forests also contain some of the medicinal species presently used in conventional Japanese cancer treatments, as well as nutraceutical mushrooms being consumed by an aging North American population.

Mainstream medical research in Japan, Korea and China has shown that polysaccharides, terpenes, steroids and other ingredients found in certain mushrooms have antibiotic, anti-tumor and antiviral properties. Some mushroom species have been shown to have anti-inflammatory effects, others reduce lipids in blood, stimulate the immune system, inhibit the synthesis of prostaglandins, extend the survival rates of patients with Hodgkins disease, lymphosarcoma and pancreatic cancer, and alleviate certain side effects of AIDS. Extracts from *Trametes versicolor*, a common BC fungal species, account for about 16% of Japan's national annual expenditures on anti-cancer agents. One extract from the mycelia of this species sells in Tokyo for between US $1,500- US $2,000 per kilogram.

British Columbia's image throughout the world as a pristine source of wild mushrooms coupled with the scientific and technical capacity to develop and supply standardized products provides the foundation to capitalize on this new area of non-timber forest product diversification. Medicinal fungi can be collected from existing wild stocks, augmented in cultivation forests, or cultured in laboratory facilities to provide a continuous supply.

Preliminary macrofungal surveys conducted in the autumn of 1999 on QCI/HG yielded an array of wild edible and medicinal fungi, many of which are common throughout the province (Fogardy, pers. com). The QCI/HG age-class nine, hemlock, spruce stands examined were havens of activity for parasites and wood decay fungi and were most interesting for medicinal fungi. Many of the areas visited had significant components of dead or dying, decaying trees and stumps from which conks or shelf/bracket fungi fruited prolifically. Of particular medicinal interest were the frequently encountered species such as *Fomitopsis pinicola, Ganoderma applanatum, G. tsugae* and *Laetiporus sulphureus*.

There is a gamut of issues to be addressed. Some of these issues are discussed in Chapter 4: The Community and Its Concerns: Issues and Implications, and reflect, in part, a broader concern on the part of the Haida about potential commercialization of Island medicinals.

2.4.8 Eco-tourism and knowledge based services

The QCI/HG is well known as an eco-tourism destination. Several businesses offer a variety of tours, many of them focused on Gwaii Haanas National Park Reserve located on the southern half of Moresby Island, and incorporate cultural heritage sites of international significance. There are also many artists and craftspeople, working both with Haida and other traditions, and a few specialized opportunities such as birding tours.

A recent British Columbia report (Lee and Williams, 1999:4) states that "market opportunities exist in BC for the development of innovative and authentic cultural tourism experiences," while Brubacher (1999) comments that interest in eco-tourism in Aboriginal settings is growing. Trends in the rapidly growing eco-tourism sector include increasing demand for more relaxed, "softer" experiences (as opposed to physically arduous adventures). A related trend is toward more interest in educational, cultural and social experiences.

Non-timber forest products offer a number of opportunities as part of tourism experiences. Brubacher has identified the following Canadian examples of tourism products based in whole or in part on knowledge and use of wild plants:

- In Nova Scotia, a company offers guided walks and other services related to understanding the traditional uses of plants by the Micmac (www.lunco.com/plants).
- In Crooked Lake, Saskatchewan, a member of the Cowessess First Nation has established an eco-tourism business that provides cultural learning experiences and educational opportunities (www.cableregina.com/users/lungar).

Several communities in the United States hold annual mushroom festivals that celebrate the harvest of species such as the morel. Food-themed festivals are popular in all parts of the world. Native plant foods could easily be incorporated more fully into traditional feasts and specific "wild food" dinners. The growing popularity of mycological societies and natural history societies in general suggests that there is considerable interest in outdoor activities devoted to identifying and gathering fungi. Classes in crafts using wild materials are also highly popular (Moen, pers. com., 1999). Wild Food Adventures is an Oregon based business that offers a wide range of nature walks and workshops on wild edible foods and medicinal herbs (www.teleport.com/~wildfood).

The scale of tourism development is clearly a concern for Islanders. Gwaii Trust (web page, 1999) reports that "there is a overwhelming lack of public enthusiasm for the development of a world class tourist destination."

2.4.9 Miscellaneous

Many other products offer potential. For instance the forest industry regards alder saplings as 'weeds' and actively disposes of them on tenured areas. A willow furniture making industry has developed in parts of Canada and the US. We believe that a potential exists to develop a similar use for alder saplings. This would have a dual effect of providing a benefit to the lumber industry (thereby encouraging their cooperation) as well as providing 'free' feedstock for a cottage type furniture making industry. Alder can also be used as a growth medium for mushroom culture, such as shiitake and oyster mushrooms.

2.5 Economic information available on products

The following section provides harvester, wholesale, or retail prices on a selection of products currently being harvested and marketed elsewhere. The commercial use of the products listed may or may not be appropriate or viable on the QCI/HG. The prices are simply a starting point to the market research required for any development venture.

The most meaningful economic information on non-timber forest products, other than mushrooms and salal is available only from research carried out in the Pacific Northwest. There are very few B.C. sources of such data at present.

2.5.1 Berries

Prices paid to harvesters (Blatner and Alexander, 1998)

Species	**1995 (US$)**	**1996 (US$)**
Coastal Huckleberries (red huckleberries)	$3.04/lb	$2.20/lb
Interior Huckleberries	2.92/lb	2.17/lb
Blackberries	2.00/lb	1.67/lb

Note: Average export price for wild huckleberries (from San Francisco and Seattle) in 1996 was US$7.61 and $12.83 in 1995. Local (Pacific Northwest) retail prices were also higher in 1996 than in 1995.

2.5.2 Floral and Christmas Greens

An indication of wholesale prices for a variety of floral greens is available from the Burnaby Flower Auction (Source: pers.com., Darleen Cump, November, 1999). The auction sells about 1,000 bunches (five per bunch) of salal per week, year round, on average.

Product	**CAN$**
Evergreen boughs (cedar, pine, fir)- per bunch (24-36 inches long)	2.00- 2.40
Salal - per bunch	2.00
Japanese Boxwood – per bunch	1.80
Willow (including *Salix contorta*) – per stem	2.40
Sword Fern – per bunch	0.80
Mosses (described as "very popular item") per pillow-sized bundle (all kinds – dried preferred)	4.00
Pine cones (4 inches long, 2-3 inch diameter) - per cone	0.20
Baby's Breath (largest demand in February) - per bunch	3.00
Live Christmas trees (5 foot including pot) – per tree	12.00

The following list if from the from the **Lost Coast** website
(http://www.saber.net/~frmtheforest/lostcoast.htm)
US$ converted to Canadian at rate of 1.40. 25 pieces per bundle. Wholesale prices.

Ferns		
Sword fern	*Polystichum munitum*	CAN$4.90/bundle
Maidenhair	*Adiantum pedatum*	$5.60/bundle
Deerfern	*Blechnum spicant*	$4.90/bundle
Brackenfern	*Pteridium aquilinum*	$4.90/bundle
Ladyfern	*Athyrium alpestre*	$5.25/bundle

Miscellaneous Greens

Salal (Lemon Leaf)	*Gaultheria shallon*	$7.84/bundle*
Huckleberry (red and green)	*Vaccinium ovatum*	$3.85/bundle
Oregon-Grape	*Mahonia nervosa*	$4.90/bundle
Beargrass	*Xerophyllum tenax*	$3.15/bundle
Scotch Broom	*Cytisus scoparius*	$3.50/bundle
Boxwood	*Pachistima myrsinites*	$4.90/bundle
Horsetail (Rush)	*Equisetum arvense*	$3.85/bundle
Manzanita	*Arctostaphylos pungens*	$3.85/bundle
Chinquapin	*Castonopsis chrysophylla*	$4.90/bundle

Evergreen Boughs

Douglas Fir	*Pseudotsuga menziesii*	$4.90/bundle
Western Red Cedar	*Thuja plicata*	$4.90/bundle
California Myrtle	*Umbelluria californica*	$5.60/bundle
California Eucalyptus	*Eucalyptus globulus*	$4.90/bundle
Silver Dollar Eucalyptus	*Eucalyptus cinerea*	$7.70/bundle

The following list is from the **Wildwoods Evergreens** website (http://www.cable4fun.com/wildwoods.htm), Nov. 1999 (prices converted to Canadian at 1.40 exchange rate). Wholesale prices.

Balsam Wreaths	24"@ $16.80 / 60" @ $64.33
Cedar Wreaths	24" @ $23.75
Roping (garland)	3 sided $0.63 per foot

2.5.3 Mosses

Extract from Oregon Mountain Forest Products Packaging Company. Wholesale prices.

Green Moss	Large Bale (approx. 25lbs) sells for C$ 42 - $46 depending on volume
Spanish Moss	Large Bale (approx. 25lbs) sells for C$ 52 - $61 depending on volume

2.5.4 Venison

There is no commercial harvest of wild venison in BC; however, for study purposes we include harvest prices (wholesale) for farmed venison, as quoted in company catalogue.

Product list (partial) from Arbutus Bay Deer Farms 777 Beechwood Drive, Mayne Island, B.C. Canada V0N 2J0,
Phone & Fax: 1-(250) 539-2301
E-Mail: marbutusbay@gulfislands.com

Farmed Fallow Venison (All Prices are in Canadian Dollars)

Loin and Tenderloin	$14.95 per lb.
Filets	$16.95 per lb.
Deer Sausages	$10.95 per lb.
Young fallow deer, whole carcass (50-80 lbs.) or 1/2 carcass (25-40 lbs.) plus cutting costs & vacuum packaging	$ 7.95 per lb.

Deer hide products (All Prices are in Canadian Dollars)

Tanned hides, averaging 7 square feet	$60.00
"Beautiful spotted hides, hair on"	$125.00
"Suede Dress Indian Style"	$445.00
"Classic Indian Fringed Dress"	$795.00
Hand Bags	$69.00 -$79.00
Fanny Packs	$49.00
Gloves	$49.00
Deerskin moccasins	$59.90

2.5.5 Natural remedies and culinary herbs

Taken from **Trinity Alps Botanicals** website (http://www.trinityalpsbotanicals.com) November 1999.

Trinity Alps Botanicals
Post Office Box 196
Burnt Ranch, California 95527 USA
Telephone: (530) 629-3514 FAX: (530) 623-2433

Rumex acetosella (Sheep Sorrel)	whole	1.5 oz.	$3.00	$15.00
Rubus idaeus (Raspberry)	leaf	1 oz.	$2.00	
Trifolium pratense (Red Clover)	flower	1/4 oz.	$1.50	$30.00
Rosa sp:. (Rose Hips)	whole	2 oz.	$2.00	$13.00

Nutraceutical Mushroom Price list from (Lost Coast) website November 1999

Scientific Name	Other Names	Uses	Dosages	Toxicity	Prices
Trametes versicolor	*Yun-Zhi* *Kawaratake* *Coriolus versicolor*	immune stimulant, antibiotic, pulmonary disorders, antiviral, hepatitis, infections of respiratory, urinary, and digestive tracts, cancer preventative and curative, adjuvant for cancer therapies	up to 5 grams in powdered capsule form up to 20g /day as tea or in soups	no toxicity	$95.00/lb dried tea form $20.00/oz tea form
Schizophyllum commune	*Split-Gilled Mushroom*	gynecological diseases, cervical cancer, immune activation, chronic fatigue syndrome, adjuvant to cancer therapies	up to 9-16g /day in tea form	none known	$210.00/lb dried tea form $46.00/oz tea form
Ganoderma applanatum	*Kofukitake* *"Ancient Ling-Zhi"* *Artist's Conk*	rheumatic T.B., reduces phlegm, eliminates indigestion, stops pain, antibiotic, hemostasis, esophageal cancer, adjuvant to cancer therapies	up to 30g /day as tea	none	$130.00/lb dried tea form $20.00/oz tea form
Ganoderma tsugae	*Songshan Ling-Zhi*	cancer inhibitor, immune activator, adjuvant to cancer therapies	3-7 g/day as tea	very low toxicity reported	$50.00/oz. dried tea form
Fomitopsis officinalis	*Quinine Conk* *Eburiko*	purgative, asthma, chronic coughs,	200mg to 2 g/day	if taken in substantial quantities can cause intestinal irritation and nausea	$90.00/lb dried tea form $12.00/oz tea form

Chapter Three: Haida Concerns - Issues and Implications

3.1 Traditional and subsistence use of NTFPs on Haida Gwaii

The Haida's traditional use of a wide range of plants for food, medicinal and other purposes continues to this day. The Haida have traditionally gathered a variety of roots, rhizomes and leafy parts of plants such as the spiny wood fern, liquorice and the bracken ferns, rice root, lupine, eel grass, western dock, and stonecrop, as well as several types of seaweed (Turner, 1995). Berries and other wild fruits, especially Pacific crab apple, were an important part of the diet and were gathered and preserved as winter stores. Common berries included highbush cranberry, salal berry, red huckleberry, blueberry, strawberry, and bog cranberry. Labrador tea was used for both culinary and medicinal uses. Dried seaweed, crabapples and native tobacco were traded with neighbouring peoples for goods unobtainable, or less common, on the Islands.

While many of the traditional "vegetables" are less commonly used today, berries continue to be an important food resource for Haida (and for non-Haida residents as well). Traditional picking areas and personal "patches" are still recognized and respected; means of ensuring that they continue to be so are of concern to Island residents, as discussed later in this report.

3.2 Haida issues

Until aboriginal rights and title are resolved in QCI/HG, these Haida issues will continue to permeate any discussion of economic development, especially opportunities based on land and resources. Haida people are concerned with large numbers of people coming onto their traditional land base and interrupting lifestyles and existing uses of the land. All members of the Haida Nation with whom we spoke insisted upon the necessity of the Haida participating fully in planning, management, implementation of monitoring of NTFPs, and of any economic development initiatives being taken in partnership with the Haida Nation. Some potential products, such as medicinals, are highly sensitive, as are food plants, especially berries, which are harvested by many Haida for personal use.

Haida people expressed strong resistance to any form of regulation that would limit their ability to harvest products from the forest. As discussed further in Chapter 4, many Islanders - and especially Haida - are concerned about an influx of off-Island mushroom pickers and about potential impacts on fisheries and other environmental effects. As noted by the Council of Haida Nation (CHN), however, the Haida currently do not have the authority to deal with these issues that have potential long-term implications.

Traditional harvesting territories and unresolved rights and title issues - including issues of intellectual property rights - will become ever more important as economic values are identified. Harvesting of culturally sensitive resources for commercial exploitation may conflict with Haida' heritage and/or cultural values, and will lead to open conflict if left unresolved. Concerns about the commercialization of traditional food and medicinal plants were strongly expressed at open houses held to discuss the project and review the draft report, especially in the community of

Masset. As noted earlier in this report, comments from the public meetings are summarized in Appendix A. Parallels were frequently drawn with the fishing industry, in which the advent of management was seen as the 'beginning of the end" for fisheries such as abalone. Political leaders of the Haida and others who expressed their views to the research team argued forcefully for Haida control of any new development of NTFPs as essential to avoiding similar results with non-timber resources. It was argued that such involvement should include control over projects such as the current research report and the dissemination of information about NTFP resources on the QCI and opportunities for commercial development.

There is some interest among the Haida in the commercial development of NTFPs, as evidenced by the Economic Development and Heritage Resources Planning Session held by the Old Masset Village Council in September, 1998. At that session, both salal and wild mushrooms were identified as potential projects in an economic development strategy (Old Masset Village Council, September 1998). Haida also participate in Islands Community Stability Initiative (ICSI), which is the proponent of the Community Forest Pilot Project and has also looked into the feasibility of establishing an NTFP business venture. Haida representatives with the CHN state that land ownership issues must be dealt with prior to any development of a QCI/HG NTFP industry.

Specifically, the CHN stated that the subject of NTFPs, including this research project, should reflect the concerns of the Haida people. These concerns include:

- Providing values for products, which may subsequently attract people to the QCI/HG to harvest NTFPs is of concern, especially prior to the management of the resource;
- Resolution of land claims and management issues is necessary before any further development occurs;
- Haida rights must be recognized prior to the issuance of any form of tenure rights to NTFPs;
- Sustainability must be established prior to harvest. These studies must be carried out by personnel approved by the Haida;
- Haida must have full participation in any management of the commercial use of NTFPs;
- The management and commercial use of NTFPs must not interfere with traditional and subsistence needs of the Haida people. Haida sacred and traditional harvest sites must be protected.
- The concept of not using NTFPs for commercial purposes must be understood;
- The emphasis of this report should be on the settlement of land use and property rights issues, not the further development of resources.

The following chapter presents the concerns of the QCI/HG community in general; however, many of these concerns are shared by, or are of particular interest to Haida people.

Chapter Four: The Community and Its Concerns - Issues and Implications

Introduction

The remote location of the QCI/HG creates a natural environment with many unique or rare characteristics. The community, too, has its own sense of uniqueness and many residents, both Haida and non-Haida, value their independence from the rest of the province. Some residents recognize the Islands' potential for offering opportunities to take part in the greater provincial economy, while maintaining the ability to protect local uniqueness. Still others see the Islands as part of the Province of British Columbia and Canada, both in terms of community and economy.

Many concerns raised about the commercial development of NTFPs on the QCI/HG also reflect concerns widely voiced in other communities where NTFPs have become a larger part of local economies and by researchers, government and the "NTFP industry." This chapter will present some of these concerns and will discuss their implications for NTFP development.

This discussion of issues and concerns of various QCI/HG communities is by no means exhaustive and only considers the information we gathered about NTFPs from those with whom we met individually and those who came to the open houses during our various visits to the Islands. Undoubtedly, many Islanders will have other interests and concerns that are not reflected here and we apologize for any omissions.

This chapter will discuss the following issues:

3.1 NTFPs and the timber industry;
3.2 Environmental concerns;
3.3 Socio-economic concerns;
3.4 Information and monitoring needs;
3.5 Summary – non-timber forest products and the problem of the commons.

In Chapter 5, we will discuss some approaches and ideas for addressing some of these issues, including some experiences from other jurisdictions.

4.1 Non-timber Forest Products and the Timber Industry

As the previous chapters have indicated, there are numerous values associated with forest resources. Can we expect to enjoy the benefits from all these values, however? In terms of our consumptive use of forest resources, the ability to extract several products from the same land base, such that we earn the highest return for society depends on the relationship among each of the products and how we use them.[10] Resource use conflicts can occur when the use of one product precludes or limits the use or enjoyment of another product or value we ascribe the forest. This can happen whether or not it is something we wish to harvest, the enjoyment of a walk through the forest, or conservation related. The competing relationship between non-timber forest products and the timber industry is a prime example of this potential for resource conflicts. However, there is also a complimentary relationship between the two sectors that must be understood.

This section briefly explores the issue of timber versus non-timber forest products, not only for wild mushrooms, but also for other products of commercial value. Can our forests only sustain the use of one product, or are there other uses that can provide additional benefits, thus generating more value from the forest and spreading the income across a broader range of the community?

The open-houses held in August, 1999, and January, 2000, and other discussions with harvesters and buyers brought to our attention several concerns regarding the relationship between the timber industry and NTFPs. Some of the concerns are as follows:

- The loss of valuable mushroom sites;
- The costs to the forest industry of non-timber forest product harvesting;
- The long-term impact on recreation sites such as Skidegate Lake: vandalism, complaints of noise, and harassment are of growing concern;
- Conflict with harvesters of other NTFP products;
- Multiple resource uses in Crown forests and the need for coordinated forest management;
- The need for long-term evaluation of all forest resource values;
- The lack of input into the decision-making process when sites are undergoing planning for logging;
- Trade-offs between uses - What are they? Could they be minimized?
- Conflict between recreational and commercial NTFP harvesters;
- Impact on recreational or commercial wilderness experiences.

4.1.1 Competing versus complimentary uses

Two or more uses of the land base can be described as competing when the production of one good precludes, or at least reduces the ability to produce another good. Complimentary uses on the other hand describe a relationship between two goods whereby the production of one actually enhances the other. In British Columbia, the forest land base is managed for multiple use, which is accomplished by incorporating a range of other forest values into the management of the land base for timber production. Values reflecting society's concerns of old growth, riparian areas, biological diversity, visually sensitive areas, wildlife, and recreation among many others are incorporated into timber management. However, other than recreation, these are generally non-consumptive uses and do not address some people's desire to use other forest resources for consumptive purposes, whether for subsistence or commercial reasons.

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[10] There are also non-consumptive values associated with the forest that should form part of our understanding and management of the forest resource.

4.1.2 Age class relationship to mushroom productivity and timber rotation

The most productive sites for edible wild mushrooms depend on various forest conditions, one of which is the age class of the forest. Studies and anecdotal information from harvesters indicate that chanterelles, for example, are most productive on younger sites where the trees range in age from about 25 or 30 years to 80 years (Pilz, Molina et al., 1998b; pers. com. Brian Eccles). The chanterelle does not appear to be abundantly productive in old growth stands. On the QCI/HG, this is apparent by examining one of the Island's most productive sites located around Skidegate Lake, which has stands of close to 45 years of age, and in numerous other sites of similar ages where the chanterelle is most productive. In contrast, pine mushrooms in northwestern British Columbia appear to be most productive in stands between the ages of 60 to 160 years (Trowbridge et al., 1999). This suggests a complimentary relationship between timber harvesting and mushroom productivity over the long-term: chanterelles thrive in younger forests and timber harvesting ensures a constant supply of young forests.

In the short-term, however, timber harvesting precludes any further site specific mushroom production for at least 20 years, depending on the silviculture system used (i.e., subsequent light penetration).[11] Depending on the value of the timber and its end use, forest companies begin to include second growth stands in their development plans when the trees approach 45 to 80 years of age. On the QCI/HG, cut blocks on some highly productive mushroom sites in the Skidegate Lake area have been or are selected to be harvested.[12] In this case, mushrooms and second growth timber have become competing uses as the desire to harvest both products converge during some of the mushroom's most productive growing period. After the trees reach approximately 80 years of age and mushroom productivity declines, the uses generally revert to being complimentary.

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[11] While timber harvesting will affect mushroom production, studies have not been conducted on QCI/HG to examine the differing effects of alternative silvicultural systems, such as partial retention or selective logging.

[12] J.S. Jones has harvested some cut blocks in the Skidegate Lake area and Weyerhaeuser has submitted development plans for the area, but is unlikely to pursue harvesting during the current economic climate for small diameter timber.

Does society derive greater benefit from an early timber harvest that invariably affects the production of mushrooms, or would society be better served if the minimum timber harvesting age were greater than 80 years for the specific site type that produces the greatest volume of chanterelles? Further biological, productivity and economic research is required for an answer,[13] but the question highlights the need to better understand these relationships and learn more about NTFPs. To achieve a process of land management that incorporates NTFPs into the planning process, mapping the location of productive mushroom sites will be necessary. Without this knowledge, it is doubtful that a large area, such as Skidegate Lake, will be protected from further logging development.

In terms of other complimentary issues, certain patterns of timber harvesting, thinning and pruning and other silvicultural treatments create or improve the conditions for non-timber forest products; examples include berries and cedar boughs.

4.1.3 Road access and safety issues

Another complimentary relationship between timber harvesting and the mushroom industry (among many other activities requiring access to the forest) is the construction and maintenance of roads providing access to forested areas. Many of the mushroom areas would simply be uneconomical to harvest if relatively easy access was not provided by forest service roads. However, the existence of hundreds of people on and around active logging roads also creates the potential for accidents, and the mushroom season can be a time of tension for forest industry personnel who use the roads for access to cut blocks and transportation of cut timber. At one of the open houses, road deactivation was raised as something that is adversely affecting the ability to access some backcountry areas.

4.1.4 Timber and other non-timber forest products

Other non-timber forest products, such as salal, cedar boughs, and mosses are also affected by timber harvesting. However, their greater availability (in relation to some mushroom species, for example, that are found in fewer areas and only at specific times of the year) allows the harvest of these products to continue in a variety of areas and times of the year, given sufficient access to appropriate sites and cooperation among the timber industry and non-timber forest product harvesters. In some cases, accessing the area prior to or just after timber harvesting could allow more intense use of a cut block's non-timber resources. Removing some undergrowth, such as heavy salal, could facilitate silviculture and eventual timber harvesting.

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[13] A study by Olivotto Timber, 1999, did a preliminary examination of optimizing timber and pine mushroom values in one area of the province. A SMFRA funded study conducted by Petersen, 2000, et al examines chanterelle productivity on several different sites on QCI/HG. See also Pilz et al. 1998a.

4.2 Environmental Concerns

As noted several times in this report, there are large gaps in scientific knowledge about NTFPs. Many of the environmental concerns raised by Islanders, and by many people in other areas, are grounded in this comparative vacuum of information and understanding. Some of the specific concerns raised during discussions with Islanders include:

- Biological productivity and the rate of harvest. Concerns surrounding what we can do with what we have, so that we do not compromise the resource and surrounding environment.
- In order to understand the biology of a specific NTFP, biodiversity cataloging needs to be undertaken in established picking areas as well as areas with a high potential.
- Over-harvesting of any NTPF is a concern, especially the impact of harvesting levels on the gene pool in isolated populations. How will forest health be affected?
- Damage to other forest resources occurring through inappropriate harvesting techniques, raking and soil compaction, cutting of trails, incidental damage.
- Fire hazard situations rise with more harvesters in the woods.
- What is the impact of NTFP harvesting on wildlife and wildlife habitat?
- Are mushrooms being harvested at sustainable levels? What is a sustainable level?
- Identification of NTFP functions in the forest ecosystem and harvesting levels balanced with biodiversity objectives.

4.3 Socio-Economic Concerns

4.3.1 Influx of off-Island pickers

Many islanders stated their distaste for the annual influx of off-Island mushroom pickers. Concerns were expressed about the state in which informal mushroom camps are left after the season ends (garbage, etc.) and with possible impacts on fish-bearing streams from human waste. The researchers were told about confrontations between local people and off-Island pickers; about pickers becoming lost and needing to be rescued at local cost and effort; and about local fears of being in the forest during mushroom picking season.

Of the communities visited, Sandspit was least negative about the presence of off-Island pickers, local buyers and merchants apparently seeing these individuals as necessary to the industry and as providing local benefits in terms of spending on food, accommodation and other services. Forest companies and Ministry of Forests personnel confirmed the need to clean up camps at the end of the season. During a September visit to the Skidegate Lake area, however, researchers observed that garbage disposal facilities and an outhouse were provided by an Island businessperson who had set up a small store to serve the harvesters and others in the area. We were also told that some buyers haul garbage and encourage pickers to keep the camp areas clean. Regardless, after the 1999 season, garbage and camp debris was littered along the shoreline and at various campsites.

4.3.2 Impact of increased development on local communities

Concerns about an expanded NTFP industry seem to flow in part from concerns about potential negative impacts of any increased commercial activity or development on the Islands, especially if it is initiated from outside the Islands themselves. These concerns seem to be connected with an often-expressed conviction that commercial activities have extracted resources from the Islands and given little back. Some individuals and groups, especially members of the Haida Nation, perceive the commercial exploitation of NTFPs as yet one more stage in this pattern. Not everyone holds this view, of course. Some Islanders perceive NTFPs as an opportunity for local initiative and control, and for the QCI/HG to demonstrate how resource industries can be developed and managed in a more sustainable manner than has occurred in the past.

There are also positive impacts to development and the QCI/HG mushroom harvest provides a good example. Not only does it provide some additional income to local residents who want to participate in the harvest, and for those who act as buying agents or erect temporary stores, it also attracts people to the Islands who do spend money locally. While the current situation of lakeside camping and garbage is obviously not ideal, a more organized area with more permanence would deal with many of these problems.

4.3.3 Mistrust of non-Islander generated recommendations

Resistance towards non-local economic initiatives is accompanied by a mistrust of non-Islander generated recommendations about economic initiatives. Several Islanders expressed their belief that, even when they are consulted, their input is ignored. This opinion was frequently stated in the context of the belief that the purpose – or at least the expected outcome - of the current research project is to recommend regulation of the mushroom harvest and the harvest of other products, and to pursue taxation of mushroom earnings and infringe upon traditional harvesting activities and rights.

Many of those involved with the NTFP industry in QCI/HG and elsewhere believe that harvesters, buyers and others do not have sufficient input to, and control over, the way in which forestlands are managed. Many believe that the commercial, subsistence and cultural values of NTFPs are systematically under-represented in forest land management decisions (McLain and Jones, 1999). We have attempted to overcome some of these concerns through our meetings with many of the people and organizations with interests in NTFPs, and by providing ample opportunity for community members to voice their concerns and take part in the debate concerning the development of NTFPs on QCI/HG.

4.4 Information and Monitoring Needs

Monitoring, as the term suggests, means to watch and gather information about something of which we have an interest and is most often used to provide feedback and comparative data on the development of a project or policy. It provides industry, land and resource managers, researchers, other stakeholders and the local population with information describing the intensity of an activity and can inform us of potential ecological, social, and economic implications given a continuation of that activity.

Multi-year baseline biological, economic and social information is needed to make informed decisions on how best to manage the harvest of NTFPs. Several issues, many of which have been raised elsewhere in this report, point to the need for monitoring:

- Ecological concerns, such as potential effects of over-harvesting, the natural productivity of the resource, garbage and other environmental effects related to the influx of harvest labour; and
- Socio-economic concerns, such as the value and commercial productivity of the non-timber resource, the labour it supports, the income it derives through sales and export, and the trade-offs between non-timber products and the timber resource.

Many of the issues raised during the meetings with community leaders, industry participants, and residents of the QCI/HG talked of the need to know what exactly is going on in the forest. Who is out there and what are they doing? What are the effects of that activity? One of the likely reasons for the negative attitude towards the development of any NTFP is that we do not know the answers to these very basic questions.

4.5 Summary: Non-Timber Forest Products and the Problem of the Commons

If we review the issues and concerns discussed in this chapter, we can see a linking thread. This thread is often called "the problem of the commons." The problem of the commons refers to a situation in which a resource - such as fishing, grazing or non-timber forest products - is available to everyone who wishes to use it. Common property resources exist where there are no exclusive rights to the resource, no rules about how much can be harvested, where, or when. As a result, no individual has the incentive or accepts the responsibility to husband the land base, especially if there is a threat of another person reaping the benefits of that work. Under existing laws governing the nation's land, the "Crown" owns the commons, including non-timber forest products, although in numerous cases some of these property rights are encumbered by First Nations land claims. Up to now, government has chosen not to confer rights for the use of these products, or make rules about the harvest of NTFPs, except in particular situations, such as Provincial parks.

Many community members identified the sort of problems that typically arise with common property resources:

- Conflicts among users;
- Attitude towards non-local, or outsiders;
- Concerns of traditional users that their interests will be trampled in the rush to commercialization;
- Neglect of economic value of NTFPs relative to timber, and
- Low levels of investment in developing and sustaining a profitable industry.

NTFPs are a classic "common property resource," subject to neglect, misuse and under-investment. An open commons can "work" if the level of demand for its resources is low enough that there is no competition between users and no problem of potentially overusing or destroying the resource itself. As Islanders told us, however, this is not the case. If Islanders wish to protect traditional and recreational uses, and build a sustainable NTFP industry, the problem of the commons will eventually have to be addressed. The next chapter discusses some possible approaches to this issue.

Chapter Five: Some Approaches to Addressing Community Concerns

In this chapter, we will first discuss some of the ways in which other jurisdictions have dealt with the same issues that have arisen on the QCI/HG. We are not suggesting that any or all of these approaches are applicable to local circumstances, but they may provide some useful ideas. We then suggest some options that could be considered for the QCI/ HG. We wish to emphasize two points:

1. This report was not intended to be primarily about policy issues related to NTFPs; however, it became clear during our time in the Islands that the potential for viable commercial development depends heavily on the resolution of "non-business" issues. Other forums, such as land use planning and the Forest Policy Review, are, or should be, dealing directly with policy questions.

2. Aboriginal rights and title issues are clearly of major importance to non-timber resource development; these issues are beyond the scope of this report. We have identified problems and concerns that were raised with us, but have not attempted to deal directly with approaches to their resolution. There are several other forums in which these issues are being, or should be, addressed.

5.1 Experiences in other jurisdictions

Other jurisdictions, including European countries and the Pacific Northwest of the United States, have been grappling with NTFP issues for a much longer period than has British Columbia. There may be some lessons to be learned from these experiences. We concentrate in this section on the Pacific Northwest, as it shares many of the same products and markets as coastal British Columbia.

In this section, we provide some information regarding:

5.1.1. Permits and licences;
5.1.2 Research;
5.1.3. Involvement of harvesters and others in forest resource planning and management;
5.1.4. Relationships among commercial and other types of harvesters.

5.1.1 Permits and Licences

McLain and Jones (1999:2-3) report that:

> In the U.S. Pacific Northwest, as competition for NTFPs increases, forest stakeholders are calling for regulatory and policy reforms in the NTFP sector (Schnepf, 1994). Land managers have become more vigilant in enforcing existing laws and regulations related to NTFP use and management. However, many NTFP harvesters and buyers often have had only limited involvement in the development of these new laws and regulations. As a result, new rules governing NTFP use and management may not take into account the knowledge that NTFP harvesters and buyers have acquired over years, and sometimes generations, of harvesting these products. In addition, compliance rates are often low, as many harvesters and buyers remain unconvinced that the new regulations are based on anything more than political expediency or unreasonable fears about the dangers of overharvest.

McLain and Jones (1999:4) note further that:

> The push for NTFP policy reform on federally owned forests in the Pacific Northwest coincides with a shift in the management paradigm that shapes management priorities of the U.S. Forest Service and the Bureau of Land Management, the two largest public land management agencies in the Pacific Northwest. In the past five years, both agencies have adopted ecosystem management as a guiding principle, the goal of which is to manage for the long-term integrity of whole ecosystems, not for the production of single resources.
>
> NTFP harvesting on both federal and state lands in the Pacific Northwest requires some form of license or permit. For example, commercial mushroom collecting in the Olympic National Forest (managed by the US Forest Service) requires permits costing US $50 for 14 days, $80 for 30 days and $120 for the year (Liegel, Pilz et al, 1998). The Washington State Department of Natural Resources issues permits for harvesting on state lands. Also, haul permits are required in Washington to transport commercial quantities of all non-timber forest products from harvest sites on private or public lands to buying stations. State objectives for this regulatory regime include obtaining adequate revenues from harvesting "variable materials" such as non-timber products and recovering costs to cover trash collection, sanitation upkeep and environmental damage associated with harvesting activities (Liegel, Pilz et al, 1998:27).

In the Pacific Northwest, as in British Columbia, the American matsutake or pine mushroom is the most valuable commercially harvested species of wild mushroom. In 1989, the Winema and Deschutes National Forests in Oregon began issuing mushroom harvesting permits. The two national forests now cooperate on a matsutake program that addresses concerns about the effects of harvesting on the mushroom resource, the needs of harvesters, and the effects of harvesting on local communities (Pilz, Smith et al, 1999). The program includes a workshop which harvesters must attend before being issued a permit. The topics include harvesting techniques, minimum mushroom sizes, areas off limits to collection, protection of archaeological sites, camping etiquette, firearms law, and wildlife dangers. The workshop is targeted to the Asian American groups who form the majority of the harvesting workforce. Pilz, Smith et al (1999) report that permit compliance (i.e., the number of pickers who actually purchase permits) has increased significantly with the implementation of the educational program from an estimated 3-5% in 1989 to over 90% since 1993. The two original national forests now cooperate with the adjacent Willamette and Umpqua National Forests to issue permits valid in all four forests.

Commercial permits cost US $50 for 5 days and $200 for the season (1997 prices). Pilz, Smith et al (1999:5-6) report that matsutake permit revenues exceed the cost of managing the harvest and conducting research. Income from the sale of permits goes to the US Treasury, however, and does not directly support management and research activities. Funds for managing the mushroom resource come instead from timber sale program budgets. Local ranger districts are seeking authority to retain mushroom permits to fund program administration, education, law enforcement, and resource monitoring.

5.1.2 Research

Research on NTFP productivity, ecology and biology is considerably more advanced in the Pacific Northwest than in British Columbia. Much of the research that has been done and is ongoing concerns wild mushrooms (see References). Of considerable interest is a US National Assessment of Non Timber Forest products, coordinated by the United States Department of Agriculture Forest Service (USDA National Assessment of Non-Timber Forest Products, website, http://www.ifcae.org/ntfp/publications/assessment/).

The purpose of the assessment is to provide a compendium of easily accessed information about the following subjects:

- Historical and current non-timber forest products and their markets;
- The ecology and habitats of non-timber forest product species;
- Options for expanding societal benefits with products from non-timber forest species;
- Benefits and impacts to society from expanding uses from non-timber forest product species;
- Culturing methods and monitoring and research protocols to ensure sustainable populations and harvests of non-timber forest product species;
- Institutions, regulations, and incentives for improving efficiency in species use, access to supplies of species, and equitable distribution of benefits from non-timber forest products;
- Conflicts among groups using non-timber forest products and models of conflict resolution;

- Policy issues for continuing species conservation and economic development of commercial species;
- Issues of cultural survival, lifestyle choice, and ecological ethos for diverse groups of Americans;
- Changes in the market values of raw materials from individual species; and
- Resource technology, markets, and marketing practices upon which to base new business ventures.

The subjects being investigated by the US Assessment may provide a useful agenda for NTFP research on the QCI/HG and in B.C. more generally.

5.1.3 Involvement of NTFP users in forest management

As was found in the QCI/HG, NTFP harvesters in the Pacific Northwest believe themselves to be excluded from land and resource management decisions. McLain and Jones (1999:5) observe that:

> Some harvesters have extensive knowledge of both the products they harvest and the ecosystems in which those products are located. Many commercial and subsistence harvesters have been found to regularly experiment in their daily work to identify stewardship practices that would ensure the long-term productivity of the resources from which they derive their livelihoods (Love et al., 1998; McLain and Jones, 1997). Yet few NTFP harvesters or buyers perceive themselves as having a voice in making new rules regarding NTFP allocation mechanisms. (Kantor 1994; Robinson, 1994; Love et al., 1998). On-going research of wild mushroom policy suggests that NTFP harvester/buyers also have little voice in defining and selecting more general forest management options, such as size and locations of timber sales, timing and locations of controlled burns, or location of road closures (McLain and Jones, 1998). Yet these types of decisions also can greatly affect both NTFP productivity and people's ability to access key NTFP gathering grounds.

The limited involvement of NTFP harvesters and buyers in the decisions that affect their livelihoods has at least two negative consequences for sustainable forest management. First, management decisions made without significant involvement by harvester/buyers do not adequately incorporate the broad range of experiential knowledge that is available about NTFPs, and the resulting policies often mesh poorly with social and ecological conditions. Second, the regulations developed by public forest managers without input by harvester/buyers lack social legitimacy among NTFP harvester/buyers, and non-compliance rates are often extremely high.

McLain and Jones (1999) describe three initiatives in the Pacific Northwest that have attempted to address these issues:

1. Trinity Bioregion NTFP Partnership: Northern California

This project began in the late 1980s with a group of NTFP harvester/buyers and small farmers in Northern California. With financial support from Trinity County and the United States Department of Agriculture-Forest Service, the partnership now includes two wildcrafting co-operatives (Trinity Alps Botanicals and the High Mountain Herb Cooperative), US Forest Service managers from two national forests, the US Forest Service Pacific Southwest Research Station, the Watershed Research and Training Center (a local NGO) and members of the Hupa tribe. Results of the partnership include (McLain and Jones, 1999:8):

- Expanded marketing opportunities for independent wildcrafters and coordination in filling orders between cooperatives;
- Training workshops for NTFP harvesters;
- A pamphlet which provides guidelines for sustainable harvesting of certain NTFP species (Everett, Y., 1997);
- NTFP regeneration trials on public lands;
- Development of a field inventory method and geographic information system (GIS) based inventories of NTFPs (based on the Forest Service's existing GIS system); and
- Development (in progress) of a Forest Service permit that will include information that harvesters can use to increase the price of their products (e.g., official notice that local forests have been pesticide free since 1984) and that will request information from wildcrafters that can be used for ecological monitoring.

Silviculture and agroforestry trials are also planned.

2. Forest Workers/Harvester Network Program. Pacific Northwest

In the mid-1990's, the Jefferson Center, a small NGO based in Oregon, began sponsoring a series of forest worker/NTFP harvester gatherings in Washington, Oregon and California. The gatherings are intended to bring together people with different forest-based occupations and of different ethnic backgrounds to begin talking about the problems that affect them all. Participants include those of Cambodian, Mien, Latino, European-American and Native American (First Nations) background. In 1998, the group formed an Alliance of Forest Workers and Harvesters and sponsored a series of meetings between wild mushroom harvesters and the US Forest Service. Results of these meetings included lengthening the wild mushroom season on four National Forests in central Oregon and a series of mushroom camp meetings that provide some harvester input into Forest Service wild mushroom regulations and policies. The Jefferson Center program links several groups with similar concerns, including the Trinity Bioregion partnership discussed above.

3. Northwest Special Forest Products Association

This association was formed by several floral greens buyers in 1992. In 1994, the group received a grant from the Oregon Economic Development Department to assist it in developing the NTFP industry, which had been designated as one of Oregon's key industries in rural areas. Full membership is available only to licensed NTFP companies, although anyone with an interest in NTFPs could be a non-voting associate member.

The association attempts to improve relations between the NTFP industry and public and private landowners, to lobby for legislation to protect the interests of NTFP industries, and to provide linkages between NTFP companies and federal agencies.

McLain and Jones (1999) report that the first two groups described above seem to be effective and are attracting growing support and involvement. The NW Special Forest Products Association, however, has had difficulty in achieving consensus among its members on policy recommendations and other issues, including membership criteria. They attribute part of the organization's difficulties to its unwillingness to fully involve harvesters in the organization.

5.1.4 NTFPs – Different uses – different users

Conflicts among users of NTFPs for different purposes were reported during the QCI research. Alexander and McLain (1999), Emery (1998), Love et al (1998) and others have described several international examples of how inter-harvester conflicts are perceived and dealt with. These authors observe that picking mushrooms, berries and other NTFPs has many possible meanings for different harvesters. These different perceptions sometimes lead to conflicts, or at least to misunderstandings.

Alexander and McLain (1999:1) note that, as researchers, they "…heard many stories about pickers threatening each other over mushroom patches. Though when we attempted to verify them through discussions with local law enforcement agencies or with people who had been there at the time we invariably found that they tended to be exaggerated." They further note that an "inadequate understanding of the nature of these conflicts may lead us to develop polices with unintended consequences…[and that]…Many people tend to view wild mushrooms and berries as resources rather than as objects with a variety of potentially conflicting social meanings. At the same time, we tend to divide harvesters of these resources into two broad categories – which we can broadly classify as commercial and non-commercial users."

QCI/HG residents pointed out these same distinctions and noted that, even within these two broad groups (commercial and non-commercial) there are many distinctions: local versus non-local commercial pickers; "full-time" versus "part-time" pickers; "recreational" versus "subsistence" or "cultural users." In many cases, one individual can fall into several categories, depending on the type of product, the time of year, and the degree to which he or she needs to supplement income. There are often ethnic, social class or other differences between the various groups of harvesters. This fact was also noted in the QCI/HG, and underlines the need to know more about harvesters (as well as about the products they harvest) and to find ways of avoiding and resolving conflicts that may result as much from misunderstanding as from actual conflicts over the products themselves.

In reviewing various studies about conflicts over NTFP use, Alexander and McLain (1999:5) observe that:

> A common thread in these studies is that for many harvesters, the cultural meanings and values of the resources are as important to them as their economic or subsistence values. In short, where wild foods such as berries and mushrooms are concerned, most commercial harvesters take part in that activity for more than just financial gain: harvesting mushrooms or berries isn't just a job, it is a way of life. Similarly, although most non-commercial berry pickers consume the berries they pick, berry picking is often as important to them for the cultural and spiritual needs that it fulfills. In short, if we look beneath the surface of the so-called mushroom wars in Oregon and Washington, we will probably find that in many cases the conflicts aren't wars over mushrooms at all, but rather they are conflicts about the cultural meanings of mushrooms and conflicts over different ways of life.

Many of those we spoke to during our research in QCI/HG emphasized the importance of a free unregimented way of life in their decision to harvest mushrooms and other NTFPs. Much of their resistance to regulation of the harvest seems to be based on fears that this quality of life would be lost. Conversely, others felt that some form of management was important to ensure an appropriate harvest of NTFPs and to ensure the participation of local residents.

The cultural or ethnographic role of forest resources must also be recognized and protected. Further commercial development, if undertaken, should be done in recognition of these values. This message was repeatedly voiced in the open houses and meetings with Haida band councils and the CHN. This further stresses the need for Haida to participate in any development of these products so as to ensure the protection of these traditional values. The use of these products is ongoing and may continue to increase regardless.

5.2 Experiences in British Columbia

Through the decade of the 1990s, there has been an increasing interest in the use of NTFPs for community economic diversification. Several reports have looked at the variety of NTFP activities in B.C. in terms of productivity and economic characteristics (for example see Grzybowski 1993; de Geus 1995; Berch 1996; Ministry of Forests 1995; Meyer Resources 1995; Freeman 1997, Gamiet, et al 1998; Olivotto Timber 1999; and Trowbridge 1999).

It is important to note the work done in 1993-94 by the B.C. pine mushroom task force, which sought to address the issues and concerns regarding the pine mushroom harvest. The recommendations from that process are as follows (see Ministry of Forests, 1995):

- All pine mushroom buyers should purchase a buyer's licence;
- Increasing the enforcement of existing legislation governing litter, fire prevention, health standards, waste, wildlife, park protection and environmental protection;
- Developing then distributing educational materials through buying stations;

- Undertaking scientific research on the ecology of the pine mushroom;
- Facilitating the formation of a pine mushroom industry association;
- Providing opportunities for public participation – including First Nations – in the land use planning process, pine mushroom resource management and harvest regulation;
- Recognizing constitutionally protected First Nations' rights;
- Recognizing the pine mushroom as a valuable and renewable resource in land use planning processes;
- Ensuring that the pine mushroom management framework adopted does not infringe on First Nations' rights.

The task force went on to recommend that the recommendations include all commercially harvested wild edible mushrooms. Apart from some private lands on Vancouver, however, there has been little coordinated and formal management of NTFP harvesting in B.C.

5.3 Considerations and Options for the Queen Charlotte Islands/Haida Gwaii

Chapters 3, 4 and the first section of this chapter have raised a number of issues concerning the commercial development of NTFPs on the Islands, and discussed some examples of how other jurisdictions have dealt with these issues.

Most of these issues are not themselves related to economic viability or the potential to enhance employment and income. Rather, they provide the context within which economic issues must be addressed. Successful and sustainable NTFP businesses will depend on the successful resolution of these concerns.

Island and other commentators have suggested a number of options for addressing the issues raised. Many of these suggestions have to do with how to manage the NTFP harvest, how to obtain the information needed to properly manage the resource, and how to distribute the responsibility for, and benefits from, the NTFP industry among local and other authorities.

As reported in Chapters 3 and 4, the most urgent issues appear to be:

- Lack of baseline ecological, economic and social information required to make informed decisions on the management of the harvest;
- Lack of measures for monitoring ecological, economic and social impacts of the NTFP industry;

- The dominance of timber interests in management of the forest resource;
- The social impacts of the mushroom harvest, and the anticipated social impacts of harvesting other NTFPs;
- The absence of incentives and arrangements for recognizing and protecting investments in a sustainable NTFP industry; and
- Unrecognized and unprotected claims based on long use, including Aboriginal rights and title, that may be affected by further commercial development.

As we noted at the end of Chapter 4, there are currently no formal incentives for individuals and companies to harvest in a sustainable manner, or to invest in the long-term well-being of the NTFP sector in British Columbia. Even those who wish to behave responsibly are faced with the knowledge that if they leave product behind for the sake of the future, someone else can come along and take it and there is no recourse. Many mushroom harvesters are even hesitant to tell Forest Service staff where prime mushroom patches are even if it means protecting the sites from future timber harvesting. At present, there is no mechanism by which a timber company, for example, could reap the benefits of managing timber in such a way as to enhance mushroom values, even if the overall return to society from timber and mushrooms together is much higher as a consequence.

Generally, suggestions for dealing with these problems range from regulation of some or all aspects of the industry (usually beginning with licensing buyers), through tenures and other forms of property rights, to a strict "hands-off" approach to the current situation. These approaches are not mutually exclusive and not all of them require government intervention. Some cooperative or collaborative arrangements may be possible among the various users of the forest resource, and those who bear legal responsibility for resource management. The rest of this section briefly discusses the three major approaches to "managing common property resources": regulation; conferring property rights; and voluntary cooperation among users and resource managers.

5.3.1 Regulation

In the current provincial climate of provincial fiscal restraint and as a result of numerous pressing issues in the province's forest industry, the Ministry is not managing or regulating wild mushrooms, or other NTFP industries. The Ministry is generally monitoring the levels of industry activity and exploring ways to consider wild mushrooms and other NTFPs in management strategies such as the Land and Resource Management Planning process and through Community Forest Pilot Project tenures. Provision currently exists in the *Forest Practices Code of B.C. Act* to develop regulations for NTFPs, but these provisions have not yet been used.

Some residents of the QCI/HG - and certainly many harvesters and buyers throughout the industry in B.C. - are adamantly opposed to regulation of the NTFP industry; however, there are increasing demands throughout the province for some form of control over the industry, from both NTFP industry and non-industry people. Concerns are most acute where there is a heavy demand for the resource, for example on the lower mainland and southeastern Vancouver Island. These concerns range from environmental issues through trespass and tax evasion. In December, 1998, nine agencies, including the RCMP, Human Resources Development Canada, Revenue Canada and the Vancouver Forest Region, issued a document entitled "The Need to Regulate Botanical Forest Products in British Columbia." The report cited numerous problems ascribed to an unregulated NTFP industry.

5.3.2 Property rights

Where regulation attempts to improve the way in which NTFPs are managed by making and enforcing government rules, property rights can provide incentives for holders of those rights to manage the resources for long-term benefits. For example, if an individual or community "owns" the rights to pick mushrooms in a particular area, the individual or community will probably create rules about how to pick the mushrooms, when and where to pick them, and who may pick them in an effort to ensure the long-term economic viability of the harvest. In this situation, there is less incentive to "cut and run" and more reason to invest in ways to improve the resource.

The timber industry is currently the dominant user of the forest and is granted rights to the timber through the *Forest Act*. This right does not come for free, however. The timber industry pays stumpage on the timber it cuts, pays royalties and rents on the land and volume of timber over which it has rights, designs, constructs and maintains roads, and must be fully involved in each silvicultural component from harvesting to reforestation. The non-timber forest product industry, on the other hand, has expanded substantially over the past decade and is virtually free of government intervention and control. The industry pays no rents to the province for the benefits it receives from public forest land and bears no costs of access to the forest. Government and the forest industry also bear costs related to the NTFP industry, for example the clean-up of mushroom picker camps. Should the forest industry be required to assume more planning and operating costs by incorporating non-timber forest products into its cut block planning and harvest requirements? At the same time, should the non-timber industry continue to benefit from public forest lands at no cost to itself?

At present, the Community Forest Pilot project (CFPP) provides the only recognized form of property rights (tenure) over Crown lands that include the management of NTFP and other forest values. The Community Forest Proposal, submitted by the Islands Community Stability Initiative (ICSI, 1999:20), recognizes the potential value of NTFPs, as follows:

> The Tlell Community Forest[14] is a rich and diverse ecological system encompassing a multitude of values and economic opportunities, and is accessible to most Islands' communities. These opportunities include tourism, commercial food gathering (berries), sportsfishing, seed cone production, and botanical forest products such as mushrooms, mosses, shrubs, herbs and peat. These are in

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[14] The Tlell River watershed is the primary candidate area for the community forest licence and covers an area of approximately 23,932 hectares.

> addition to traditional forest products from the Tlell area. All of which can become financially viable and contribute to the Islands economy. For example, commercial harvesting, processing and marketing opportunities will ripple throughout the communities once appropriate infrastructure is established. A commercial certifiable community kitchen (infrastructure in place in Masset) could support a jam industry employing predominantly women and youth. An abattoir could process locally commercially harvested deer for market.

A CFPP was awarded to the Islands and public hearings about its implementation were conducted in the fall of 1999. This type of tenure may be key in the development of alternate management systems that incorporate NTFP values.

5.3.3 Voluntary cooperation

Several individuals in the QCI/HG have recommended a community-based joint management approach. Such an approach if successful, might serve as a prototype to manage commercially harvested NTFP products in other areas of the province. Representatives from all levels of government could be involved, including the Haida Nation, the Provincial, Federal and local governments, and both timber and non-timber industry representatives.

There would be a number of useful initiatives that such a group could undertake on a voluntary compliance basis. For example, it could provide educational materials to harvesters and others, spearhead research initiatives, support an NTFP coordinator to work with Islanders to develop NTFP initiatives, work with buyers and harvesters to deal with environmental, health and safety issues and collect information on a voluntary compliance basis.

There may be some options for voluntary cooperation among timber and non-timber harvesters that would be low or no cost for the forest companies. This approach could have substantial benefits for the NTFP industry. For example, a larger per hectare volume of mosses and cedar boughs could potentially be harvested within areas scheduled for timber harvesting, compared to areas where no timber harvest is scheduled and where greater care must be taken to conserve the forest resource. However, while both mosses and cedar boughs (and other debris) tend to be expendable or waste in a timber operation, they are important contributors to the cut-blocks regeneration and bio-diversity. An appropriate volume should be determined so that both the community and forest can benefit. Also, because of the effects of timber harvesting on the productivity of wild edible mushroom producing habitats, underground colony transplants could be attempted on selected sites prior to timber harvesting. In other words, relocate a portion of the mycelium in an area scheduled for harvesting to a similar site not scheduled for timber harvesting. Further research is required to understand the potential for this kind of transplant. Lessons could be taken from Asian countries that have a long history of intensely managing sites for NTFPs, such as pine mushrooms.

Non-timber harvesters can only realize the benefit of higher per hectare volumes or transplants, however, if they have access to the cut block prior to the timber harvest. This would mean a company producing non-timber products would require sufficient time to examine timber development plans, be able to cruise the site for its NTFP potential, establish its own harvest plan and have access to the area. The costs to forest companies could be limited to the time required to provide non-timber producers access to development plans.

Discussion with timber companies on the QCI/HG indicates willingness and need to consider non-timber forest products. The benefits to forest companies to do this could range from a potentially more expedient approval process for development plans to potential revenue sharing opportunities. Ideally these extra benefits would be greater than or equal to the costs the forest companies may have to incur to address non-timber resources.

It should be emphasized that a community-based management approach could be regulatory in nature, based on property rights (e.g., community, individual, company and/or other NTFP tenures) or voluntary - or some combination of the three. It is probable that most effective management systems will include all three forms of management, depending on what needs to be accomplished.

The Community Forest Pilot Project and voluntary cooperation are both obvious "first steps" for NTFP management in the QCI/HG. Eventually, however, the recognition and protection of property rights will need to be addressed, both from the perspective of Haida rights and title, and from the perspective of creating incentives for sustainable use and optimum values from Crown forest lands.

5.4 Information Gathering and Monitoring

One of the most common and important points raised about the NTFP industry is the lack of biological and economic information, and ways of gathering the information. Individuals, companies, communities or governments cannot manage a resource-based business effectively without adequate information. The final section of this chapter discusses some approaches to this problem and illustrates some of the ways in which different management approaches could be implemented.

At this time, an increasing but still limited amount of information is gathered annually about NTFPs at the provincial or sub-provincial level. To monitor the NTFP industry on the QCI/HG (as in all areas of the province), both economic and biological data should be gathered every year.[15] Most importantly, we have to understand the biological productivity of non-timber resources and what impact harvesting them has on the sustainability of the products and surrounding forest ecosystem. There are numerous methods and protocols for inventorying and monitoring plant populations, varying from qualitative and informal, to formally designed statistically based methods. Techniques may vary significantly depending on whether the species of interest are shrubs, fungi, mosses, etc. Inventories, productivity studies, monitoring protocols and mapping are clearly required, but the approaches and techniques used need to be selected in light of the goals of such activity and the kind of plants that are of interest. In B.C., most of the biological research is focused on the pine mushroom, which is but one of the 211 products commercially harvested in B.C.

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[15] SMFRA funded a study in 1999 that examined chanterelle productivity on various burned and unburned sites, but unfortunately it was only for one year. See Peterson, M.J., R. Outerbridge, and J. Dennis (2000) *Chanterelle Productivity on burned and unburned regeneration sites, in the vicinity of Skidegate Lake on Moresby Island.* South Moresby Forest Replacement Account. B.C. Ministry of Forests: Queen Charlotte City.

Economic information that would ideally be gathered includes the volume and values of the harvest, the costs associated with the industry, and the labour it supports. This information would provide an indication of the total value to the province of the particular NTFP. The information would also help to differentiate between products and in identifying highly valuable sites that could then be managed appropriately. To begin a socio-economic monitoring program, however, the information gathered could be limited to the volumes and values of the products. On the QCI/HG, this framework would support the development and distribution of educational materials, establishment of scientific study areas, and open consultation with stakeholders and the Haida.

Socio-economic monitoring of non-timber forest products on the QCI/HG can be approached two ways: through voluntary reporting; or through regulated management of the resource. There are several fundamental questions to ask in the development of an appropriate monitoring program that are important not only for those who desire the information, but also for those who potentially have to provide the information:

- Why do we need or want to monitor the NTFP industry?
- How would the information be used? Who would have access to it?
- What information would be collected?
- At what levels would the information be collected? Exporter, buyer, picker?
- Who would conduct the monitoring? Industry or government?
- Would reporting be voluntary or mandatory?
- If a voluntary system is used, is there any incentive for NTFP industry participants to provide information?
- What would be the cost of monitoring?

A voluntary form of monitoring would be the most likely option for the QCI/HG, at least in the short-term, whether or not it would be the most effective way to collect information. Initially, edible wild mushrooms would be the most obvious products on which to collect data. Economic and social information can most readily be obtained from mushroom buyers and buyers of other NTFPs. In the Pacific Northwest, for example, buyers are required to collect certain information, which has proved invaluable to understanding the ecological, social and economic impacts of these industries.

The Ministry of Forests and the Ministry of Environment, Lands and Parks are the likely government agencies to establish a program, although involvement of a local mycological society and Council of Haida Nation would increase the likelihood of a successful program. A local specialist would have to lead such a program. Obviously the system would provide invaluable information and be a precursor to the establishment of a more formal provincial reporting system. This process would have the advantage of partially enabling an assessment of the value of the

NTFP resource versus the value of other forest resources, while allowing for scientific research to determine the ecological impacts on the specific NTFP resource in light of other forest resources.

An initial step in the QCI/HG could be to increase the annual presence of local representatives, but in a cooperative non-restrictive manner. Experience from the U.S. Pacific Northwest suggests that increased contact of Forest Service and other enforcement staff with pickers was essential for the success of their management system in National Forests such as the Chemult and Crescent Ranger Districts (Pilz et al, 1999). It is also important to clearly offer the mushroom community some positive contribution. For example, a permanent display, or bulletin board could be constructed at the main buying area containing a variety of information such as fungi facts, pictures, woods safety, survival tips, an announcement and message board, and even a suggestion box. Improved and more permanent camping and buying facilities and sites would also contribute to improving the industry and minimizing its impact.

Early and consistent contact with mushroom distributors and exporters would also be important to ensure their awareness of the information requirements, or requests, and the efforts made to provide some positive contribution. Early and consistent contact with on-Island buyers is also important. Transportation companies should also be contacted and arrangements made to obtain total volume data. It is evident that local and non-local representatives would have to be involved. Problems associated with monitoring the harvest in other regions of Canada and the U.S. Pacific Northwest are largely simplified on QCI/HG, as mushrooms have to be shipped via air-freight out of either Sandspit or, potentially Masset, and by road via Prince Rupert. Ferry shipping takes place in reefer trucks but to a lesser extent, depending on the productivity of the year. It may become an issue if other NTFPs are developed.

A less formal voluntary and collaborative approach to monitoring and an inherent intention to preserve the ecological integrity of the resource would be ideal. However, many of the concerns and issues raised by local and non-local NTFP industry participants can only be appropriately addressed with some form of management. There have been a series of studies done on the management and future of the harvest of NTFPs in the Pacific Northwest and Canada (USDA, 1996; Ambio, 1998; Wills, 1999; Brubacher, 1999). These studies have looked at a wide range of issues, with a large component being focused on the mushroom industry. Many of these studies have recommended some type of regulated harvest and includes the need for monitoring both the biological effects of harvesting and the socio-economic impacts of the industry.

In future, licensing - with the emphasis on the exporters (possibly levied per buying station), could be a necessity in order to expect compliance with information requests. This would provide a mechanism to regulate harvesting practices, facilitate the collection of reliable industry information and it would support an efficient and effective administration process. Simultaneously, scientific research would be ongoing to develop other potential products and markets. Such a managed approach, perhaps more locally controlled as in the U.S. national forests, would provide a positive starting point and would be a reasonable means to immediately address some of the public concerns about the impact of NTFP harvesting.

Chapter Six: The Business of Non-Timber Forest Products

Prior to discussing the NTFP opportunities, this section will provide a general business overview and will discuss several challenges that individuals and organizations may encounter when developing a business on the Islands. These challenges are arranged into the following categories:

- business climate/opportunities;
- transportation;
- wages;
- financing; and
- marketing.

After discussing these challenges in Section 5.1, the categories will be used where possible or appropriate to examine issues around economic development on the QCI/HG and alternative business structures. Discussion of the eleven "best picks" follows in section 5.4.

6.1. General business overview

6.1.1 Business Climate and Opportunities

Apart from the large logging operations and the fishery, QCI enterprises tend to be small scale and are run by individual entrepreneurs and Haida governments or community organizations.

QCI/HG does not present an immediately welcoming business climate for outside investors. The divisiveness that we noted between the various stakeholders and communities especially in the area of NTFP property rights would cause an outsider (and even some locals) to think twice before risking capital. As a result, we have focused our recommendations in areas where individual local entrepreneurs and local communities can, with the backing of the various parties involved, derive increased economic benefit by investing in various NTFP related businesses.

For the annual chanterelle harvest, the QCI/HG can continue to regard off-Islanders as "problematic," or as part of the labour force that allows a mushroom harvest to exist. It appears that in the absence of off-Island pickers, there would not be enough local harvesters to maintain the current level of production. Wholesalers would look elsewhere and local pickers, brokers and business reliant on mushroom revenues would therefore suffer.

Aboriginal and other community objectives often tend to focus on the following:

- providing greater control over economic activities on their lands;
- creating employment;
- generating wealth to support self-government and improve socio-economic conditions;

- training; developing relationships based on mutual respect, interests, and trust;
- maintaining and developing culture and identity; supporting self-governing institutions; and
- sustaining traditional ways of making a living.

These factors were largely seen to be present in the QCI/HG and we have attempted to take them into account when drafting our recommendations.

6.1.2 Transportation

The difficulty in getting one's product to market has acted as a barrier to development for many remote community businesses (excepting huge volume extractive industries such as logging, mining and fishing). This is especially so in the QCI/HG where high transportation costs make it essential for high value or unique products to form the base of any export effort.

An opportunity exists where the high costs of transportation can act as a barrier to imports. Locally grown product, even though expensive to produce can compete effectively with imports. An excellent example on the QCI/HG is that of the local tomato grower who is able to compete with imports by producing a superior product at a competitive price through use of alternative energy sources. We were however surprised to find imported blueberries retailing in a local supermarket for $9.00 a quart when an abundance of a local substitute was readily available (see Section 5.4.4).

6.1.3 Wages

On QCI/HG, the marginal wage rate at which people are willing to work as harvesters is relatively high compared to many other areas in BC. Some of those areas, such as Northern Vancouver Island, have abundant salal and chanterelle crops and have a larger percentage of new immigrant labour willing to work at minimum wage. We were told by more than one person that due to the high cost of living on the Islands it was not worth working for less than $15 per hour. While salal, mushroom and other NTFP harvesters in other parts of BC frequently earn this amount or more, it is by no means a guaranteed wage. As mentioned in other parts of this report, this income is often in the form of cash and unreported by the recipient, thereby effectively equating to 20% higher than reported levels.

It is difficult for a mushroom wholesaler to justify the high costs of wages and off-island transportation when compared to, for example, Vancouver Island. We were not surprised to hear that many of them are shifting their buying efforts to other parts of the Province rather than continuing to pay the relatively high costs demanded by QCI/HG pickers. Any other NTFP product selected for harvest would similarly need to overcome both high transportation and wage costs. A significant advantage of either quantity or quality may therefore be necessary for the venture to be a success.

6.1.4 Finance

A major challenge facing remote communities is adapting their way of thinking away from government support mechanisms towards self-reliance; this is especially difficult in areas such as the QCI/HG which are infrequently serviced by private lenders (i.e., there is no Chartered Bank on the Islands). In addition, the lack of professionals (lawyers/accountants/realtors) available in the QCI/HG also dissuades investment by non-Island based lenders. The consequence is that access to private debt and equity capital remains a major issue for QCI/HG business development. Capital that is available therefore is quite limited or comes at a very high price. The local Credit Union is said to provide some business loans but seems unwilling to finance local mushroom buyers due to the riskiness of the business. One result is that off-Island wholesalers control the mushroom harvest.

Opportunity exists, however, as QCI/HG has good access to government and community funds through Human Resources Development Canada (HRDC), Community Futures, Gwaii Trust Society, Aboriginal lending organisations and various other government programs, some of which we make reference to below. Potential business ventures in need of finance should direct its energies towards these types of organisations.

While the following list is by no means comprehensive, some potential sources of financing are as follows:

- Gwaii Trust Society administers a substantial endowment fund established for the benefit of QCI/HG peoples. An extract of its web page states that: "For the first three years of operation the Gwaii Trust fund will research and develop ways and means to assist small business, and if practical will be added to the loan and guarantee programs." Entrepreneurs intending to adopt any of our recommended 'best picks' and who require start up capital should explore the possibilities of obtaining such guarantees.
- Community Futures is an excellent source of information about various funding programs available and in certain cases is able to assist in obtaining those funds.
- HRDC has substantial funds available through various programs, many of which apply to the QCI/HG region.
- Tribal Resources Investment Corporation (TRICORP), an Aboriginal Capital Corporation of Prince Rupert, offers loan guarantees and operating loans, as well as technical and advisory services. We understand that they have invested on the Islands.
- Aboriginal Business Canada (ABC) offers financial and technical support (lending and business services) to Aboriginal business. Forgivable and non-forgivable loans up to $75,000 are available. Joint ventures with non-FN peoples may qualify for funding.
- The First Nations Forestry Program (FNFP) is comprised of national management committees and advisory groups. FNFP provides $5 million per year in funding for proposals relating to forest management.

- The Ministry of Aboriginal Affairs (BC) First Citizen's Fund includes a Business Loan Program for new and expanding businesses. Loans of up to $75,000 are received from a financial institution and the government will repay 50% of this loan after the client pays the first 50%.

6.1.5 Marketing

At present there is no coordinated effort to market QCI/HG products in a way that would ensure higher demand and prices for these products. Many existing marketing programs could be tapped into, such as BC Agriculture's *'Buy BC'* program. T*ourism advertising could be targeted* to display the various products such as chanterelle mushrooms and services associated with them.

Future markets will increasingly shift toward a quality versus quantity market. This is where any product coming from QCI/HG may, if properly "branded" and promoted, have a competitive advantage if it reaches the right market. *A local marketing campaign and brand creation could be explored with the use of community funds.*

Certification of product should also be considered. In the case of mushrooms, Europeans are highly aware of the effects of radioactivity on mushrooms from Eastern Europe. The ability to certify the purity of QCI/HG product may be beneficial to the prices paid. However, caution should be exercised as customers may stop purchasing product for fear of what it may contain.

6.1.6 Other

An important step before any opportunity is considered is to ensure that various demands of the end user can be met. Factors such as consistency of quality and supply need to be established. For the end user to be comfortable it is often necessary to build a history of reliable business dealings between the parties. This may take several years to develop if starting from scratch.

6.2. QCI/HG Region Economic & Development Structure

The following are extracts from the Gwaii Trust web page (1999):

Goal: "To enhance the Island community through improved infrastructure stimulating local business and making the Island community a more desirable place to visit.
(Expand) opportunities for product diversification to achieve greater value adding from expanded local processing (of forestry products)."

An economic development strategy that plans for the use of local resources could contain the following components, which would be useful for QCI/HG during the development of a plan. One component could be the desire to diversify away from low growth resource based industries towards new growth knowledge based industries (i.e., rather than pick mushrooms, show urban visitors how to identify, cook and preserve mushrooms). Other components, such as the desire to develop a skilled and talented workforce and the enhancement of effective communication and transportation links may be important. Once considered and accepted many of these strategies could be of benefit to the QCI/HG when developing its own opportunities.

6.2.1 Business Climate/Opportunities

Entrepreneurship in the QCI/HG communities is both encouraged and discouraged by certain realities. The opportunities, or encouraging factors, include movements toward treaty settlement and legal confirmation of Aboriginal rights, willingness of the public sectors to support and form partnerships with business, and a rich natural resource base. At the same time, challenges such as the need for improved entrepreneurial spirit supported by the community must be addressed for the QCI/HG economic development to meet its full potential.

A key opportunity for the QCI/HG is to strengthen existing linkages, partnerships and networking between Haida and non-Haida, specifically in the area of business opportunities. In other areas of Canada, many Aboriginal economic developers have recognized that their communities would benefit from business alliances and are taking active steps to promote such alliances. A desire to foster inter-community business partnerships did not seem immediately apparent on the QCI/HG. We believe that such partnerships should be encouraged. *Co-venture opportunities with the Haida First Nation could improve success of new projects.* In many cases management expertise and other talent could be combined with Haida access to financial and other resources to produce a co-management venture, which would be of benefit to all parties.

6.3. Alternative forms of business

Due to the nature of the business environment on the QCI/HG, alternatives to the standard private/corporate investor are often sought. This presents many opportunities for community based organisations to assist local entrepreneurs. We outline some of these opportunities and their considerations and challenges below.

Aside from individual entrepreneurial businesses, there are several forms of organisation that can be considered as vehicles for economic development. The four most common are:

- Economic Development Corporation;
- Joint Venture;
- Association; and
- Cooperative.

Some successful and many not so successful EDC/Cooperatives have been established with a goal of running the economic and business interests of local communities. In all successful cases of which we are aware, the organisation has been set up to run in a manner which divorces itself from day to day political interference.

We believe that the selection of the first CEO to run any EDC/cooperative that is established will be a crucial factor in achieving a successful launch of the company. We caution, however, that a successful EDC/cooperative could, with resources at its disposition and lacking proper checks and balances, develop into a vehicle with its own politics and agenda (Alliance Tribal Council, 1996). The challenges in setting up a community organization are many. When considering the appropriateness of using a cooperative organizational structure in a small setting such as QCI/HG, one should not wish to stifle or compete with individual entrepreneurs, but rather assist them in areas where they may be weak.

6.3.1 Business Climate/Opportunities

The specialised nature of the NTFP business sometimes requires large amounts of cash to be available to pay harvesters. In addition, dealings with foreign buyers may require letters of credit, a knowledge of export procedures, shipping delays and the ability to weather sudden changes in market prices which are driven by external forces. These are all factors that have to be accounted for.

The mushroom industry on QCI/HG exists within a highly competitive market with some 10 buyers representing up to six wholesalers all bidding on product whose price is largely determined by international markets. *Opportunities exist to assist these local entrepreneurs using a community type of organisation.* Some of these opportunities are outlined below and many of them can be used for other NTFP products such as berries and may, if adopted, be the catalyst needed to get a venture off the ground.

The demand for products can be highly variable and we have heard of several cases where payment disputes have arisen after shipment of a product. This can put further strain on a local business's ability to finance a project. It is often difficult to specify exactly the quality of the product and, with significant shipping costs and distant buyers, the ability to locate alternative markets is sometimes very restrictive. Settlement terms, reputable dealers and trust between all parties need to be in place before a product can be delivered to the market. *We therefor conclude that the role of an intermediate wholesale buyer/exporter is one that can rarely be replaced by local producers and would caution against QCI/HG adopting such an action.*

6.3.2 Transportation

There appears to be ample opportunity to gain greater economies of scale, or lower overall costs, in the area of transportation. The mushroom harvest is exported via airfreight out of Sandspit airport and in an abundant year using reefer trucks via Prince Rupert. To our knowledge most product is shipped to wholesalers' warehouses in Vancouver, where after minimal sorting it is shipped to Europe or the U.S. At present the cooperation among the various buyers to ship the harvest off the Islands varies depending on factors such as the size of the harvest and the level of trust between competing companies. *We believe that an opportunity exists for a community venture to coordinate freight* between the buyers. Other freight outlets could be explored such as backhauls to Alberta (where a large NTFP wholesaler, Gro-Mar, is located), or prebooking of airfreight on a block basis.

6.3.3 Wages

Intensive *training programs* offered in the "off season" could give local pickers a competitive edge thereby increasing their effective hourly wage. These programs would include subjects such as map reading, picking techniques, how to identify the areas which are good possibilities for high volume harvests, mushroom identification (so as not to overlook other species, such as blue chanterelles, pine mushroom, king boletes and chicken of the woods, many of which are readily available on the QCI/HG), safety, and other products that may be in demand.

The more money off-Island pickers can earn while on the QCI/HG, the greater the likelihood that they will spend more of that money on the QCI/HG. We recommend that *off-Islander training programs* be established early in the picking season where pickers would be informed of basic health and safety, as well as how to increase their income by adopting some of the techniques offered through on-Islander courses.

6.3.4 Finance

The ability of individual local buyers to obtain financing is limited. Traditional banks are loath to lend to an operation that is often cash based and dependent on a seasonal, perishable product. All the buyers we were able to identify are financed by Vancouver or U.S. based wholesalers. The local Credit Union charges between 1% and 2% for cash withdrawals. We believe this amount to be excessive, thereby further restricting the ability of QCI/HG product to compete with Vancouver Island product. *An opportunity exists for a community organisation to lower this cost by acting as an intermediary.*

6.3.5 Marketing

Development of a QCI/HG brand name (such as 'Misty Isles', or 'Haida Gwaii' Mushrooms/Berries/Crafts) would, in our opinion, greatly enhance product value. Urban consumers are willing to pay extra for food products from a location where pollution is low to non-existent. We strongly recommend that any community based enterprise make efforts to *reserve the chosen name and be prepared to expend funds toward a clearly thought out marketing campaign.* We believe that the premium garnered through proper marketing efforts would go a long way towards offsetting transportation cost disadvantages, which currently exist.

This premium would flow down to the pickers and other Island based enterprises.

6.3.6 Other

Provision of facilities for harvesters to add value to their product needs to be considered. While the high local cost of power may initially make a drying/freezing facility seem uneconomic, the ability to process lower grade product, take advantage of market price fluctuations and lower freight cost opportunities all serve to make the idea worth a feasibility study. In addition, it would provide an opportunity to examine value-added aspects of product brand labeling. Where no competition from a local buyer exists, the community organisation could act as a catalyst to get a product off the ground. Harvest of berries and moss for re-sale are examples. Facilities such as unused fish freezing capacity and others that may be available on Island could be sublet by the community organisation with harvesters/buyers charged a processing fee.

6.4. Ten "Best Picks"

It must be stressed that no sustainability, environmental impact assessment, or inventory mappings have been carried out as part of this report. We therefore caution that these issues MUST be addressed prior to attempting any commercial exploitation. In addition, issues concerning Haida and other tenure holders' rights must be resolved.

Potential roles:

It is recommended that whatever venture is chosen by an individual that sound economic principals apply. Many questions need to be asked and answered by all interested parties before a venture is undertaken. Once they are answered then the involvement of the various parties in the venture can be more readily determined. Some of these questions include:

How much capital is required?
Who will provide the capital?
What is my risk tolerance?
What rewards are expected?

Value Added:

The production of a "completed" and packaged value added end product leaving the Islands, rather than another bulk shipment of a raw material for finishing elsewhere, is sometimes recommended as Islanders perceive that jobs are exported with every barge load of raw logs. The possibilities for on-Island production are limited due to the lack of an economic infrastructure, relatively high cost of labour and other inputs such as power, and start-up seed funds. Issues of access have been discussed elsewhere in this report but need to be resolved prior to an individual risking his time and money.

6.4.1 Mushrooms

Even though the harvest may be highly variable from year to year the economic benefits could, in our opinion, be readily expanded. Instead of regarding pickers (who dispose of a large portion of their income on the Islands) as disruptive trespassers, they need to be welcomed. Areas in which picking is productive need to be sought out and publicized. Facilities need to be provided. Numerous people, whether involved with the wild mushroom industry or not, identified a need to provide harvesters and field buyers with basic infrastructure, such as reasonable camping facilities with showers, potable water, garbage disposal areas, and public telephones. An improvement in distribution channels by encouraging cooperation between buyers or arranging backhauls with local importers could lower transportation costs, thereby improving the competitiveness of QCI/HG product.

Products and services associated with mushrooms need to be developed. For example, a mushroom festival showcasing chanterelles and other QCI products could be advertised both on- and off-Island. Mushroom, berry and interpretive walks would be of great interest to visitors while providing local employment. Tourists could be encouraged to attend mushrooms seminars in the late summer and fall, thereby providing a reason for them to extend their stay or return in subsequent years (many of today's urban originated tourists are thrilled at being able to 'earn' income during their vacation). Much or all of this incremental income would likely be spent on-Island for accommodation, food and other services and goods.

Based on the above and other issues raised within this report our *recommended best mushroom picks are:*

- *Picker seminars;*
- *A chanterelle mushroom festival;*
- *Drying/freezing capacity installed;*
- *Interpretive walks;*
- *Freight pooling arrangements;*
- *Creation and marketing of brand name.*

6.4.2 Floral

Substantial opportunities exist for the production of floral greens either in their raw form (e.g., salal, boughs, ferns etc.) or as crafted products. However, without a detailed study of each area under consideration, it is not possible to come up with firm estimates. Information from other regions suggests that a 'good' salal area can produce approximately 10,000 bundles (five stems each) per 100 acres per annum on a sustainable basis. At current market prices of $1.50 per bundle paid to the picker, a 1,000-acre area, which is salal rich, would generate pickers' wages of between $100,000 to $150,000 per annum. Several parties have assured us that significant areas containing salal exist on the QCI/HG. With prices paid in the European market of $5.00 per bundle, room may also exist at the wholesale level for QCI/HG involvement.

The use of glycerin preservatives may allow added value to be obtained for the product while at the same time giving opportunities to lower transportation costs by obtaining backhaul rates when available. Because a large portion of the Islands food is trucked from Alberta, backhaul possibilities may actually offer a transportation advantage when shipping to Alberta, compared with similar producers from Vancouver Island.

To test the market for any particular product it is recommended that a trial set of sample product be established with a floral wholesaler (see Chapter 7 for some names) or direct with a floral auction such as United Flower Growers Co-Op in Burnaby, B.C. Market testing could take the form of assembling, say, ten stems of three differing lengths. On expressions of interests from wholesalers a limited export program could then be commenced. Once a steady supply of a product was being met the program could be expanded by progressively adding more and more products to the mix. *It is recommended that market testing for a salal harvest be conducted on the QCI/HG.*

It is further recommended that QCI/HG people actively seek a partnership with an experienced salal harvester who would direct the employment where appropriate.

There are some areas on the QCI/HG where timber harvesting is scheduled that could provide the opportunity to harvest moss and lichen. We have seen examples of small (3 inch) lichen covered foam balls selling for $4.50 each in the Vancouver retail market. Similarly, small bags of moss sell for up to $9.50 each. The opportunities to export these products either in wholesale form or value added are in our opinion excellent. Drying facilities made available through a community organisation would further enhance the value and durability of the product. *We recommend that if appropriate areas and harvest standards are first established that a market testing of moss and lichen harvests could be conducted.*

6.4.3 Berries and other foods

During our stay in the QCI/HG we noted that few if any of the food retailers carried local berries in their stores. When questioned as to why this was so they responded that because there was no assured supply they were forced to import commercially grown product. We also noted during our stay that many hoteliers served this imported product to their off-island guests.

We believe that opportunities exist in three areas:

1. *Supply of local fresh berries to local food retailers and farmers markets. Gradually spreading sales into the Prince Rupert area and beyond.*
2. *Supply of fresh berries to brokers for export.*
3. *Supply of frozen "wild" berries to both local and regional processors.*

An individual with little access to capital could easily undertake item 1; however, both items 2 and 3 would require more extensive planning and investment. As mentioned above, development of a brand name, consistent quality, assured supplies and the selection of a reputable broker all work towards ensuring success. High transportation costs, while benefiting a local supplier (they add to the cost of competing imports) would have to be overcome by an exporter through exploring various avenues such as backhauls. The fact that many goods arriving on the Island come from Alberta suppliers may mean that natural markets for Island produce should be sought in Alberta rather than through Vancouver. *Local food importers* may find this a natural add-on to their business and may be a good avenue to *act as distributors of QCI/HG wild product.*

We met with fish freezers in both Masset and Charlotte City and noted that spare capacity exists subsequent to the fishing season. This would allow processing of secondary products and advantageous shipping rates to be sought out. The availability of spare freezing capacity on the Island could enable harvested product to be made available in bulk year round both to co-packers and local and regional markets. The use of a co-packer would avoid the need to establish a local processing facility until a sufficient market had been built up. Frozen berries could also be simply packed and made available to visitors to the Island. However it should be noted that frozen wild product face high competition from frozen-farmed berries with the price advantage of 'wild' product being somewhat eroded.

Frozen berries from 'farmed' sites often trade in the wholesale market at $0.50 per pound or less. Fresh 'wild' berries can trade in B.C. wholesale markets at anywhere between $1.50 to $2.00 per pound depending on the year and the scarcity or otherwise of the berry in question. These prices may not provide sufficient margin for harvesters to be paid an acceptable wage. Salal berries - a species that has not been marketed extensively in the past - may offer an opportunity in that their rarity value in non-local markets could enable a premium price to be demanded. Combining the crop with harvest of salal for decorative purposes is an area that we feel should be explored.

To maintain the quality and consistency of supply *a single QCI buying facility may be beneficial.* Product must be size sorted and clean (i.e., free of dirt and foliage). Product labeling would also enhance value by promoting the environmentally pristine nature of QCI/HG berries.

6.4.4 Herbs

Once community and Haida concerns related to the commercial use of medicinal and other species are met the following actions could be undertaken:

Initially, agreements with local supermarkets should be reached specifying minimum acceptable quantities, packaging (can at first be very simple), price and quality. We recommend that mint, which is known to grow in abundant quantities on the Islands, be tried as a first step. While many people on the Island told us that nobody would buy mint, rather they would go out and pick it themselves we are of the opinion that such a product stands a good chance of success. Once a regular local harvest and sale is established, the harvester/seller could enter into an agreement with local food retailers to use returning empty food trucks to broaden distribution at minimal cost. At that stage more detailed planning would be required. *We recommend that market testing of mint harvests be conducted.*

We recommend herb brokers in Alberta and B.C. be contacted directly and asked what products they are currently seeking. If these are readily available on the Islands then samples should be collected, assembled and shipped to establish the viability of a market. Once a price and quality has been established then advertising in local publications for community pickers will enable the feasibility of a local harvest to be determined. Labeling that stresses the wild nature of the product and its environmentally pristine background etc. would go a long way toward commanding a premium price.

6.4.5 Craft

With some 20% of the Islands adult population being involved in one form of art or another (Gwaii Trust web page, 1999) the opportunities for the expansion of QCI/HG craft products are only limited by the imagination of the individuals involved. NTFPs could form a large base of potential products ranging from Haida cedar baskets to forest based table arrangements.

6.4.6 Venison

We believe that an opportunity exists for a facility to process skins, antlers, hooves and other by-products of the deer hunt. These products could then be made available to local craftspeople. *We recommend that a study be conducted to examine the feasibility of a local processing facility of deer by-products.*

In the longer term, (if a wildlife exemption is granted) the harvest and sale of Island venison would in our opinion be commercially viable. *We recommend that the community should approach wildlife officials with a view to obtaining a harvesting exemption for the Island.*

6.4.7 Eco-tourism and knowledge based services

Currently the QCI/HG tourist industry caters to a wide variety of North American and International visitors. One of the areas in which the community with its unique location and history may wish to expand its economic presence is in the area of knowledge based tourism.

The demand for Aboriginal and nature based knowledge related products is growing rapidly in the tourism industry. High income, urban visitors are keen to experience traditional values such as NTFP food harvesting and spiritual values associated with certain forest experiences.
We recommend the consideration of services such as mushroom tours, mushroom festivals, and forest interpretive walks.

One of the successes behind fishing as a recreational sport is its ability to offer the promise of being "cost free" if sufficient quantities of fish are captured. A similar approach could be attempted with "goods from the woods" whereby people are taught how to identify a chanterelle, berry and other food product. Goods harvested could even be brought back and incorporated into craft making courses, thereby adding on-Island value. As an example, in Mexico, it costs four times as much to buy an unpainted vase and be taught how to paint it than to buy one professionally painted by an artisan in the local market.

Other ideas such as use of Haida expertise in the area of wood and other crafts could enhance tourist visits to the area. The use of forest lands as eco-tourist destinations and the use of conducted Museum tours and Lootas Feasts as an opportunity to educate non-Haida people are also possibilities.

In all cases, cultural sensitivities must of course come first. However, with proper guidance from local Haida Elders and the alliance with operator(s) skilled in the management and marketing of such activities, substantial economic and other benefits could result.

6.4.8 Miscellaneous

The use of alder whips to assemble 'rustic' furniture could provide opportunities. At present, the forestry industry considers young alder to be a "weed" needing removal on a regular basis. It is therefore likely that alder whips could be obtained at a very low cost (harvesters could possibly even be paid to remove it). With the assistance of a trained craftsperson skilled in making 'willow' furniture, such as chairs, planters, etc., local craftpersons could be taught how to assemble such furniture. Alternatively, a central facility allied with the Community Futures sponsored woodcarving facility could readily be established. Sale of the product while initially on-Island could readily be expanded into Prince Rupert and other nearby locations. *We recommend that a feasibility study be conducted to establish a local processing facility for alder whip furniture.*

6.4.9 Cranberries

While cranberry farming on a commercial basis has been tried in the past, we believe that many of the reasons for the failure of the venture can now be overcome. Several areas exist on the QCI/HG, which may offer ideal sites for the location of a commercial cranberry bog.

An assessment as to the commercial viability of putting a commercial cranberry bog into production needs to be undertaken. Initial capital expenditure is high with land preparation costs sometimes running into the low six figures for a 20-acre site. The availability of "natural sites" on the QCI/HG may, however, lower the initial investment significantly making the project one that is highly doable. Once a site is selected and correctly planted little ongoing maintenance of the land and its crop is required. After a period of three years harvesting either through field flooding or beating is done over a few weeks a year with frozen product being highly acceptable on the market. *We recommend that a feasibility study be conducted on a commercial cranberry harvest.*

6.4.10 Cooperative marketing and transportation arrangements

While not a saleable product, the concept of a well-developed marketing strategy could provide many cost efficiencies for local producers. In addition, the cases in the U.S. that were described in Chapter 5 indicated that associations or cooperatives could provide smaller local entrepreneurs with transportation efficiencies, access to marketing programs and expertise, a sharing of knowledge, and a much greater chance for success.

We believe that significant savings and enhanced product returns could be achieved through the implementation of a community cooperative venture focused on marketing, transportation and new product development. Such a venture would not compete with presently established businesses, but would strive to compliment them through achieving what no one entrepreneur could do on their own.

For example, in a good mushroom season, brokers compete to gain transportation space and frequently are uncomfortable cooperating with their competitors. This means that individual shipping costs are often higher than they should be. An independent entity acting for all brokers may be in a position to gain more favourable rates through block bookings. It is also felt that a community-sponsored venture would have a better chance of success in negotiating backhaul arrangements with businesses, which are currently importing produce to the Islands. Many of these businesses would be reluctant to deal with an individual broker who often would not have a well-established credit rating. In addition, on-Island brokers who used this system could create a significant advantage to offer wholesalers, compared to those who were not part of the pooling arrangements and would have to seek independent freight services. This would create value for locals.

The ability to act as a transportation facilitator could also be translated into other products that are not currently shipped off-Island due to high costs for small loads. Such a venture may enable new small businesses to test market their product off-Island, at competitive freight rates, when spare capacity became available.

The venture could expand into storage offering pooled storage facilities to harvesters of NTFPs. Spare storage facilities could more easily be rented by a community venture. Again value would be created, as product losses resulting from poor storage would diminish.

Initially we do not feel that it would require a large staff to set up and operate a pooling transportation/storage system. One person would be more than adequate and such a venture, with the addition of storage facilities, could be self-supporting in its second year of operation.
In the area of marketing, as previously mentioned, we feel that selection of a brand name with aggressive marketing would go a long way towards creating a premium for QCI/HG products. This name could be licensed to a stream of local producers in a variety of products, who would be required to adhere to certain quality standards established by the community. We believe that this would enable new products to enter the market with a greater likelihood of acceptance by consumers. The community would also be able to exert a certain amount of control over what it felt was an acceptable product.

Such a marketing program does not necessarily come cheap, however. We feel that once the viability of the transportation/storage components was established, the concept of a marketing venture would be an easier sell to the community at large.

Chapter Seven: A Pickers Report

by Wendy Cocksedge with assistant David Pfeiffer

7.1 *Queen Charlotte Islands/Haida Gwaii Chanterelle Harvest Background*

Where?

The Haida Gwaii / Queen Charlotte Islands. The island on which most of the commercial harvesting is done is Moresby Island. Buyers, harvesters and locals all claim that Moresby Island is where non-locals and local non-First Nations come to harvest, and Graham Island is where local First Nations pick. Judging from appearances, one could add, "and never the twain shall meet".

On Moresby, the harvesting is done around Skidegate Lake. The chanterelles grow and are picked in a very large area, all the way from Copper Bay to Mosquito Lake, within TFLs 39, 47, and 24. However, the majority of picking is done right around Skidegate Lake, due to access. Most of the buyers and harvesters are set up between the logging road and the lake, with congregations at Mile 11 and Mile 9. As many pickers don't have a vehicle, the areas they harvest are within walking distance from their camp. The north side of the lake has the advantage of having a south slope, which is purported to be good for the chanterelles. It also has forest cover of the perfect age for chanterelles, as there was a large forest fire through the area in the 1950s. On the north, the picking is done from and along spur 30 over to about Mile 4. The areas covered start at the road and extend back probably a couple of kilometres, though only the hardiest make it much past the first ridge. Most pickers feel more confident staying within hearing distance to the road to avoid getting lost. The south side of the lake is much more difficult to access, though at least one person usually has a boat to ferry people across. On the west side of the lake down to Mosquito Lake, there are a few main roads and some deactivated roads which provide access into areas, but much of this was thinned in the 1980s and the debris is not pleasant to walk through for very long. This year, this area was very poor for finding chanterelles, though some claimed that usually it is an excellent place to find quite a number. To the east of Skidegate there are some spur roads which go both to the north and to the south which are used to access areas for picking.

When?

Chanterelles fruit every fall but the actual times vary from year to year, depending on a number of factors, the main ones being temperatures and rainfall. Mushrooms tend to flourish after a heavy rainfall, and a long period of dry weather is not welcomed by the harvesters. This year the season was considered to be exceptionally late, and the buyers did not start buying at Skidegate Lake until the first week of September. Last year, they were set up by the first week of August. The season usually goes until the end of October, perhaps into November. The boletes fruit just before the chanterelles, with their season ending about the time that the chanterelles become harvestable in terms of size and abundance.

Who?

The harvesters

The harvesters are a community unto themselves. Although they ranged in age from late teens to some who appeared to be at least 65, many formed a tight community. These communities would sprout like the mushrooms themselves, forming around the buying stations. This year, there were two main areas of buying stations, one at Mile 11 and one at Mile 9. We formed part of the Mile 9 community, and watched the "dry shacks" appear as the pickers waited for rain. These consisted of salvaged two-by-fours or alder poles, with clear polypropylene or tarps fastened securely on to form a type of waterproof building. Many people were very creative and resourceful, finding stoves, pipes, bricks, countertops, and even kitchen sinks, all of which they worked into their shacks. Everyone was quick to share both time and salvaged finds with others. It was easy to see how a few months could be spent very comfortably in a climate which is usually quite wet and cold. Many meals were shared, as were experiences, drinks, and facilities. An outhouse was built at both Mile 9 and Mile 11, and a primitive but very useful store and a garbage pick-up were even established at Mile 11. The atmosphere was definitely a friendly, welcoming, and open one. People waved when you passed, either on foot or in a vehicle, and were quick to offer advice and tips to new pickers.

This year, there were only about 50 pickers when we first arrived, though apparently some had come and gone. Some had come for the bolete season and finished as it did, and others had come to pick chanterelles but had left when discovering that the season wouldn't be a good one. The pickers who remained had a range of experience. A couple people had never picked mushrooms before, many had picked before (either chanterelle or pine), but this was their first year in Haida Gwaii. A few had been returning for the season for a number of years. It was interesting, though, that experience did not dictate how one would do in the industry. Two pickers who had teamed up, Max and Derek, had no experience picking before arriving this year. On their first days out they had picked $30 and $50 respectively, but after only four or five days were making somewhere around $200 per day each. They were very motivated pickers who put in long days and long hikes out into unpicked areas, and it obviously paid off.

Those who were picking around Skidegate Lake had a huge variety of backgrounds. There were some locals picking commercially. Those from Sandspit were termed the "weekenders", and those who were from Graham Island were usually camping with the other harvesters. Others came from many areas of BC, Ontario, the Maritimes, the United States, Australia, New Zealand, and Russia. A majority of those who were there were self-labelled drifters, and had lived in a huge variety of areas. These pickers too had terms coined for them. The locals simply called them all "the pickers" (even the local pickers), and it wasn't usually spoken with any sort of delight. One local called them "degens", short for degenerates, as they are thought by some to be a rather dirty bunch of people. There were a few classifications within the pickers themselves. There were the "hard-cores", who went out rain or shine, regardless of price, and worked long hours in the woods. There were also the "professionals", those who had been around a number of years and knew all the good patches. These pickers managed to make good money in few hours per day. Many of these "professional" pickers would pick only a few baskets a day, one claiming "I don't like to get greedy".

The educational backgrounds of the pickers was varied, but few had much if any education beyond high school, though there were a few exceptions, with one or two university students picking. Most, though, claimed that they had attended the "school of hard knocks", and judging from what we saw, it had taught them quite well. Most of the people had similar sorts of backgrounds regarding employment, as most had worked in either the natural resource or service industry. One person worked the oil and gas pipelines in Alberta, one was a cook with forest camps, a couple were professional pickers who followed the seasons, and one person incorporated other non-timber forest products into his income, along with the mushroom harvesting. One had been a mushroom buyer in the past but preferred picking, as the buying "took up too much time and doesn't pay as well".

The influx of 100 to 300 people for a few months every year in the small town of Sandspit does not appear to be very welcome, as it brings a host of confusion and some claim increased crime. However, there were a few locals who appeared happy that there was extra income floating around in the fall, and that the mushrooms were picked and used. There did not appear to be a focus on tourism on the whole, and a few locals said directly that they would prefer to not have tourists and pickers come to the area.

The buyers

We spoke at length with only one buyer, as having a loyalty is fairly important in the mushroom-harvesting world. All buyers are extremely knowledgeable about a wide variety of species, and all have their mushroom identification books available for pickers. Of course, the mushroom buyers benefit from obtaining large quantities of mushrooms, so all provide some sort of incentive to the harvesters, the main form being a friendly smile and a warm dry shack at which to sell your mushrooms. Our buyer provided hot coffee and snacks (from cookies to pickles), and always a laugh. Some of the pickers and locals claimed that the buyers would give extra cash to their good harvesters to keep them coming back, and some claimed that bonuses would come in other forms (though none were clear as to what this might be). He was always helpful with whatever we needed, from baskets, to picking tips, to dry firewood. It's a rather mutualistic relationship that establishes itself, much like a mushroom on a tree root.

Why?

In some ways, picking mushrooms is a very easy way to make money. No education is required, as long as someone is there to show you a few pointers to get started, which the buyers are always willing to do. Not much equipment is required, simply a knife, a bucket, and some raingear. When you find a good patch, you simply kneel down and load up your bucket. You take your bucket to a buyer at the end of the day and receive instant cash.

On the other hand, picking mushrooms requires far more from a person than most jobs. It is one thing to know that the mushrooms are in the forest, and often quite another thing to find them. It took us some creative thought, a feel for the land, many tips, a compass, an altimeter, a topographic and an aerial photograph map to find any good patches. Even in the good years, it is necessary for people to be creative as the good, accessible areas are picked quickly. Then, when a person knows where a good patch is, getting to that patch can be quite an ordeal. Some people have trucks, which makes access easier, but most go by foot into the woods. We found, from our own experiences and from talking with others, that the average walk to a site is an hour. Sometimes this walk is pleasant, as the forests are wonderful and mossy in Haida Gwaii, but usually it is across some fairly steep terrain, and often we found ourselves pushing through chest high salal for at least a part of the way. It is doubtful that an inexperienced city dweller would find themselves having very much fun.

Further, mushrooms bloom in the cool fall, and they love rain. These are not ideal climate conditions for wandering around the woods, and heading out day after day into the rain requires some amount of mental stamina. Along these lines, although the gear required is simple, good gear and foresight makes worlds of difference in the woods. A person could go on for days in good thermal wear, sturdy hiking boots or fitted rubber boots, and solid, strong raingear. However, put someone out there in running shoes, cotton t-shirts, and flimsy raingear and you know that person has to be tough to stay at it. Having a good backpack to carry the baskets is also very important, as it allows a person to go further back into the woods and not have to worry about running out of carrying capacity. Although all of the people we saw who used packs used standard backpacks, apparently there are backpacks available which are like a series of baskets joined together, which would be perfect for the task. Backpacks are almost a necessary convenience, but it does mean that the picker is carrying quite a load on their backs at all times.

Many years, it is claimed, pickers can make an average of (Can)$300-500 a day picking the chanterelles. During our time on Haida Gwaii, the average made was (Can)$60 a day. Given an eight-hour day, pickers were making about $7.50 an hour, or less, if they spent longer hours in the woods. Mushroom picking is a lot of work for this hourly rate, yet there were many people out there this year who stuck at it. Why?

For some pickers, regardless whether it is a good year or bad for the chanterelles, their experience is such that they are still able to make a decent wage. Though many claimed that this was the worst year they had seen for the chanterelles, there were a few individuals who were managing to make $100 – 250 on a daily basis.

For the locals, it appears to be a way to supplement incomes. We found that many people hold more than one job in Haida Gwaii in order to make ends meet. Commercial harvesting is one more way to find some extra money, particularly for those whose work is seasonal, such as in tourism or fishing. On speaking to a few locals, we found their income to be very much tied up with the mushroom industry, whether through direct picking, buying, packing and shipping the mushrooms at the airport, or providing services for the mushroom pickers.

For those coming in off the Islands, it's almost more of a lifestyle than a job. The dry-shack communities are set up, and many do not pick every day, rather only when their cash runs low. People say that they love the freedom to work when they choose, for how long they choose, and to be responsible to no one. They live as closely to the land as possible and as far from the structured society as possible. To them, the mushroom industry provides a freedom that has nothing to do with the "gold rush mentality" cited by media. After spending 10 days in this profession, we no longer needed to ask "why".

7.2 Diary of a research picker

Friday, September 17

We were met at the Sandspit airport on Moresby Island by Sinclair Tedder from the Ministry of Forests. We immediately drove down to Skidegate Lake, which is where we would be picking. As we traveled down the long, graveled road and began approaching the area where the action was happening, we noticed that we were examined by all whom we passed. It was obvious that not much would go on here without people knowing of it. This might be somewhat unfortunate as we were hoping to be as discreet as possible. Without telling any untruths, we were planning on simply blending in as pickers. It was thought that if we were to be associated with a government research project, we might not be able to obtain the information we desired. However, there did not appear to be any obvious positive or negative response to the forestry truck.

Right at the Lake edge, at Mile 11, was a rough gravel landing on which several buyers had set up business. They had built large dry-shacks, in which they bought, sorted, and temporarily stored their mushrooms. There was also a rudimentary store which had been set up, providing for the pickers' needs. On our first pass there did not appear to be many people around, but later we noticed that all along the Lake, between the road and the shore, were campsites scattered amongst the trees.

Sinclair took us to meet a buyer who had established a buying station separately from the others, down the road at Mile 9. There was room here for a number of campers, so a small community had been initiated. About 20 to 30 people were camped here, some with tents but most with dry-shacks. An outhouse had been established. The buyer was polite and friendly but did not seem particularly open. Upon hearing that we would be picking, he immediately instructed us as to the size to pick, emphasizing that he did not want to see anything smaller than a toonie. He also suggested that tomorrow we try picking on the southeast side of the lake, off of a spur road there. Sinclair, David and I continued on to the deserted Mosquito Lake, where apparently there is usually some harvesting/buying action, but we saw no one.

Finishing our quick tour, we headed back up to Sandspit and crossed the ferry to Queen Charlotte City, where we met with Brian Eccles at the regional MoF office. He, too, gave us a few tips on picking, such as not to bother going into a forest when you see alder at the edges, as the chanterelles won't be there. He also instructed as to how to cut the chanterelle and told us not to pick the buttons. Sinclair set us up with four 5-gallon buckets, took us to where we would rent our car, and we were off on our own.

Our first stop was a coffee shop, "Hanging by a Fiber", as we knew that socio-economic research involves sacrificing one's time to talk with the people involved. We were in luck. Not only was the shop run by locals who positively excelled in the art of coffee preparation, but we also ran into two mushroom harvesters who were "on vacation". The pickers, Vixen and Barb, were taking a couple of days off of picking, as the boletes were just finishing their season, and the chanterelle fruiting was not considered to have really initiated yet. Both were in their early 20s, and both laughed when asked, 'So what do you do?" Vixen had experience in a number of areas, and did part-time seasonal work when and where she could get it, such as tree-planting and working at a ski-lodge. Barb also moved around quite a bit, and this was her second year at the Charlottes for harvesting. Both were here for the full season – August to November.

We headed back to Moresby Island, and picked up another picker hitchhiking to Skidegate Lake. Mark, an Australian, had come up to the Charlottes for the first time this year. He has a schedule of working for two days, resting for two days. On his days off he was building a dry-shack over at Mile 9, where Vixen and Barb were also staying. Mark had made $40 on each of his first two days picking, though his method was really by guess-and-by-golly, as he'd never picked before. He spoke of having to go back to the mainland to look for a job before too long. However, we did notice that a large amount of effort went into securing his dry-shack over the next few days, which made the temporary aspect a little questionable.

We managed to find a good campsite about 500m down from Mile 9, as the small community camping area was already full. We set up our tent on the edge of a small stream, set up a tarp in preparation for the legendary rains, and we were set.

Saturday, September 18

After a slow morning of organization and trying to figure out maps and areas, we headed out in the car at noon. Not being mycologists, we strongly debated going over to the buying station to ask what a chanterelle actually looked like, but pride won out and we stuck with the mushroom identification book. Heading over to the spur road we entered the woods and found buttons almost immediately, and to our joy, they were very easy to distinguish. We wandered through the woods, in a somewhat southerly direction, hoping to find the purported "trails of gold". We found many cut chanterelle stumps, but we did not clue in that the area had little left, and thus we ought to leave. Most of the five hours that we spent in the woods were occupied in wandering around, identifying various fungi, and picking the odd chanterelle which we came across. We had a great find when we came across a downed log simply inundated with what we identified to be chicken-of-the-woods (*Laetiporus sulphureus*). We were glad to read, in Arora's book, that it had no poisonous look-alikes, as our identification skills were still rather tentative. We filled a bucket with it within a few minutes. We also came across a few boletes, which we picked.

At the end of the day we headed back to the buying station. When our mushrooms were weighed up, we had a whopping three pounds of chanterelles between us. Our boletes weighed out to three pounds as well, which we sold, but our buyer was not buying chicken of the woods – very disappointing for us to hear.

We learned a number of things, some rather basic information, while chatting at the buying station for half-an-hour:

- The sponge layer of the boletes must be white to be considered first grade. A bolete which has turned greenish in the pores will be bought, but it is on the edge of it's life, and therefore highly perishable. The first grade boletes were being bought for $4.00 / lb. (down form $8.00 a couple of days previous), and the imperfect were only worth $1.00 /lb. – hardly worth carrying in the bucket. They should be cut in half when picked to check for worms, because if there are worms they will not be purchased.
- Our buyer was happy with the size of our chanterelles, as we had been careful to pick only those mushrooms which had opened, or buttons significantly larger than a toonie.
- We found out that there had been someone picking out the area we were in about a half to an hour ahead of us. We should have realized this when seeing all of the freshly cut chanterelles, and moved on to another area.

- We were told to avoid calling to one another while picking. When picking with another person, often you are out of eyesight but within earshot, due to the hills and gullies. We would call back and forth as we searched, telling of what we were finding and yelling such things as "here's a good patch". Apparently, it is not uncommon for a picker to come and "scoop" another picker – that is, head up above or around them and pick out the area before the others can.
- Our buyer told us about some of the preferences and best habitats of the chanterelles. He told us that there is no point in even looking below 60 – 100m above the lake (100-150m elevation) this year. The south aspect is the best, and the forest must be 30 to 40 years old with mossy floors. He told us to not bother looking if you find some cut stems (though we found later that this does not always hold true, as some people were far from thorough).
- There is not much point in checking out other buying stations to compare prices, as they work fairly diligently to ensure that prices are equivalent. It is necessary, however, to check other buyers to see what species of mushrooms are being purchased. We found that there was another buyer who would buy our chicken of the woods, so we kept it to the following day to sell.

Sunday, September 19

We had an earlier start, but still did not manage to get out into the woods before 10:00 a.m. When living out of a tent, things simply seem to take longer to get accomplished. We headed over to the buying station to see if Barb and Vixen were around. We noticed that they picked together, so we were hoping that they wouldn't mind if we tagged along with them for the day to learn some of the basics. Unfortunately, they were not yet back from their "vacation". We met another picker, however, who was a veteran picker, very friendly. He told us, as all were telling us, that this year was terrible for chanterelles. He said that he would not pick until conditions improve; that is, rain and higher prices. He suggested that the pickers unite and not pick in order to raise the prices the buyers would pay (they were currently at $4.00 / lb.). There was a "professional" picker who also wasn't picking, and Barb and Vixen, along with others, were still on vacation. Most were taking the down time to work on their dry-shacks. He told us that the "hard-cores" always pick regardless of the situation, so the buyers wouldn't be lacking mushrooms. Our buyer told us that people were still riding on money they had made on the boletes, so weren't too concerned about the lack of chanterelles at the moment.

We went this time to the north-west end of the lake and headed up the slope. We started finding chanterelles at around100 m elevation, as we were told. There was evidence of an old chanterelle harvest in the area, but to us it did not appear fresh so we continued on. Instead of wandering around and combing the whole area, we continued up the slope (based on the advice to "go to a spot and pick"). We ended up hiking through some terrible, thinned second growth, which was very dense with much debris, steep slopes, and not a sign of mushrooms. We didn't look at the north slope at all, again following advice. We worked along the power line back to the road. Again, as yesterday, we had sporadic findings of chanterelles here and there, but most of what we did was walk, not pick. We still seemed to be missing an essence of picking, as we found the mushrooms solely by luck, and never any real patches.

An interesting note: about half-an-hour into the woods, we heard another picker a bit of a ways off, and then didn't hear them again. We didn't find any area which had recently been picked, so they must have had a good area to which they went directly (which, of course, we knew nothing about). Later, we heard a fellow yelling; it sounded like he was yelling another person's name. As this continued for about 10 minutes, we finally yelled back, in case the person was lost or in trouble. Silence. We didn't hear him again. It's funny how quickly one can slip into this secretive mode, though. When we had heard someone in the woods earlier, we had immediately become quiet ourselves, whispering rather than yelling our finds.

Back to the buying station at the end of the day. Today we had much improved, picking 17 pounds between us. We picked a couple of pounds of boletes, but they weren't first grade. Further, although I delighted in picking more than my partner David (a whole quarter of a bucket difference), I had unknowingly included some Satan's boletes (*Boletus satanas*) in my harvest, which our buyer was quick to point out.

More information was garnered at the buying station:

- A trick to keep the mushrooms clean by keeping out such things as pine needles and twigs was to tie a t-shirt over the pail with a bungy cord, and drop the mushrooms through the arm-hole into the bucket. This is effective, but can be problem if it slows down the process (not much of a problem in our case) or if the shirt was worn on previous days and has acquired any dubious odours (admittedly a problem in our case).
- We watched some "professional" pickers unload at the buying station, Max and Derek, and noticed that their harvest contained many mushrooms of a size and quality which we had been leaving, such as those with deer or slug chewed blemishes, and some smaller buttons. We therefore decided to loosen our own standards somewhat. We also noticed that they had big backpacks, which they used, into which they had placed some big baskets. We decided to follow suit for the remainder of our time.

Monday, September 20

We were starting to learn a thing or two, and becoming much more efficient. We started earlier today, hitting the woods at 9:00 am, and eliminating driving by heading straight up into the woods north of lake, right above our campsite. We set a goal of heading up to 150 m, at which point we would start to scout for picking. We did pick randomly along the way, but kept to our path. We found that the edges of salal within the forest, and edges of paths were the most productive areas. The mushrooms under the salal had been protected from the dry weather and were larger, moister and less browsed than those in the open. We found, to our delight, no evidence of the area yet having been picked. We did waste some time exploring this salal option, wandering along the salal edges. We got back on track and headed up-slope for about 45 minutes. Most of this walk was unproductive, painful, and extremely annoying, as we fought our way through chest high, unending salal. On a positive note, the berries were by far the best salal berries that I have ever sampled.

Perseverance paid off, and we hit the long awaited, much touted "patch". We were in an area which had 50-60 year old forests and a mossy floor, and the chanterelles dotted the scenery as far as the eye could see. We finally understood the concept of "getting to a spot and picking". We dumped our packs and picked in circles around them, moving the packs over a few hundred meters once the area was picked. The ridge we were on was about 100-200 m wide, and the chanterelles appeared to grow on both the north and south sides. The mushrooms were still quite dry, as there hadn't yet been any rain, but we found a number under salal, logs or moss which had retained more moisture. Interestingly, it appeared that the boletes had been picked in the area, but we didn't see any signs of anyone else having picked chanterelles. Our guess was that either the chanterelles had not been fruiting sufficiently when the bolete harvest had occurred, or the high price of boletes made picking chanterelles almost redundant. Either way, it was great for us in terms of chanterelle harvest. The unfortunate part, however, was that the rotting bolete carcasses which had been left often filled the air with a veritable stench.

There were lots of sign of bear and deer, but we didn't actually see either of the two.

Back to the buying station at the end of the day, unfortunately having to head back through the dreaded salal. However, today was a very productive day for a number of reasons. We picked 41 lbs. between us, which we learned was not only very high for this year, but also the highest pick of the day, though admittedly there were still few people picking. We redeemed ourselves in the eyes of the other pickers and the buyers, and went from "the city kids" to bonafide pickers. Gaining this respect was important, because it noticeably opened the doors of communication. The buyer we sold to recognized us as true pickers and was thus willing to share as much information and equipment as requested. The other pickers were willing to chat because it was now a situation of shared information, rather than having it only flow one way as previously. We didn't let on that it had been simple luck.

Apparently, if the mushrooms had not been so dry from lack of rain, the weight would have been significantly higher.

We spoke with an old picker who told us that back in 1983, there was a total of eight people picking, of which he was one. Each person picked about 200 lbs. per day (compare this with the 41 lbs. between us, of which we'd been so proud). Two individuals had each picked 8000 lbs. in the season, though then they were only paid $0.50 to $1.00 per pound.

Last year was a much more productive year, from the stories. One picker told of a logger who would fall all day, then pick $200 worth of chanterelles on his way home, as the mushrooms were growing copiously by the sides of the road.

We headed down the road to check out the action at the other buying station. A old picker immediately called us rookies when we entered, which we conceded. When he started to suggest that we were back already because the "little lady got tired", we told him of our 40 pound pick, which impressed both he and the buyer. Apparently no one else had picked well that day.

We learned a few things this productive day:

- The slugs appear to love chanterelles, perhaps even more so than deer.
- The chanterelles are still extremely dry, as we picked some very large mushrooms which were light as a feather.
- Regardless of advice, we found that the north slope was as productive as the south slope.
- There were still many buttons, so perhaps more time was needed to full fruition.
- To maximize production time, it is best to simply get to an area and pick. Along this line, good maps are essential – knowing the area would save much time.
- The baskets in the backpack were an absolute necessity. They saved us having to return to camp to dump our buckets, and allowed us to stay in the forest much longer. Further, they were much easier to carry than would have been an extra bucket.
- There was no longer any point in picking boletes – they were past their prime and usually wormy. The smell alone would prevent any distinguishing individual from adding the mushroom to their harvest.
- We were much more liberal in our pick, including browsed and less than perfect mushrooms (although we still did not pick any small buttons) and though they were checked over, all the mushrooms (as per usual) were accepted.
- The grapevine in the mushroom picking community is admirable. By the evening even the other community at Mile 11 was aware of our pick that day.
- Yet again, we were impressed upon that the chanterelles were magnificent last year, and terrible this year.

Tuesday, September 21

From our experience yesterday, we decided that the best course of action would be to travel over to Graham Island and obtain a variety of maps from the Ministry of Forests office. It was time to get serious. It was also time to find a decent cup of non-boiled coffee.

Brian Eccles supplied us with a 1:20,000 topography map and an aerial photograph of the area immediately surrounding Skidegate Lake. David had both a compass and an altimeter on his watch, so we were set.

On arriving back at the site, we spoke with some other pickers and learned that the pickers had been on strike yesterday in order to drive up the prices. We felt a little foolish in our ignorance, though we hadn't been the only ones picking. We skirted the issue with our buyer, and asked him why people weren't picking. He said that they were simply still rich from the bolete season, and would pick when their money ran out. Today, however, so few people picked that he did not have enough mushrooms even to take to the plane.

Learned today:

- Contacts are everything. Apparently others can have quite a bit of difficulty in obtaining maps, if they even think of the possibility.
- Some pickers start very early to get ahead of other pickers, but others know that they will be walking to areas where others will not pick anyway, so start quite late (noon).

Wednesday, September 22

Pouring rain today, but we were excited about using our new methods. Further, we thought that in order to keep our status as true pickers, we would have to show the others our ability to endure all conditions.

Using the topographic map to identify a prime peak, and the aerial photo map to determine the best method of access (as the salal fields were evident in the map), we headed out at 9:00 am toward our predicted patch. The map had allowed us to find a much easier route of access than our previous day's meandering had provided, but it was still impossible to avoid all of the salal. We hiked along de-activated logging road for 30 minutes, only to find that a couple of people with 4X4's had managed to drive up. We headed into the woods and found that there were definitely many mushrooms growing in this area, but it had been picked. A few moments later we ran into the picker. He claimed that he had been in the area for the last few days, and had picked the whole area. Further, he told us that he'd been watching us for ten minutes. Although this was a little creepy, he was probably watching to make sure that we were not picking buttons; that the harvesting in "his area" was sustainable. In respect to the picker, and because there were no mushrooms left to pick, we wandered off further back into the woods, heading toward another area we identified on our maps as being a good possibility. We hadn't gone far before we found an area which was completely unpicked. We harvested almost all of our day's pick from this area of easy picking. Total picking time was only about three hours.

The land in this area was rather difficult for orientation, as the slope varied considerably. Added to that were some rather bizarre and inconsistent readings from the compass. We had heard that this was not uncommon in the areas around the lake. Some said that there was a lot of heavy metal in the soil, some attributed it to leftover buried metal from logging operations, and others to First Nations spirits.

Back to the buying station, to find that we were not being tough by picking in the heavy rain, we were being ignorant. When the rainfall is particularly heavy, pickers do not go out, and often buyers do not buy due to the conditions of the mushrooms. We spent a hilarious half-hour drying the surfaces of the mushrooms with toilet tissue. Although the buyer complained bitterly, and chastised us unceasingly, he purchased all of our rather soggy mushrooms.

Learned today:

- The conditions for picking are rather finicky. Too dry means that the mushrooms will not be growing in any significant number and the weight when picked will be low, meaning less money to the harvester. However, too much rain leads to soggy mushrooms, which deteriorate quickly and therefore may not be bought by the buyer.
- There are tricks to improving/maintaining the state of the harvested mushrooms when picking in the rain. The first is to cut holes into the bottom of the bucket to allow the water to drain. The second is to use the small buying baskets to carry the harvest, which hold approximately 7 lbs of mushrooms. Two or three baskets will fit into a large backpack, and the lids to the baskets can be secured with ties. This prevents the mushrooms from being jostled and destroyed, and it also allows better drainage.
- Most people pick for only a few hours in the rain, if at all.
- We were not the only ignorant pickers. A few had mushrooms in a far worse state. Mark had not thought to put holes in his bucket, even when the weight of the bucket significantly increased with the volume of water he was carrying.
- Unless you very much enjoy what you are doing and/or have an entertaining partner, picking in the rain can be quite demoralizing.
- Good rain gear is essential. We noticed that several pickers had a minimum of gear, including running shoes, cotton t-shirts, and thin raincoats. Even David, with good, weatherproofed hiking boots, found that they never dried out completely. Investment in a few items would vastly increase the comfort level. This would include fitted rubber boots, thermal or dryfit shirts and pants, and heavy tear-resistant rain clothing. A hat was also quite a delight to have along.

Thursday, September 23

Today much time was spent in organizing the camp, doing laundry, and replenishing food (amazing how quickly food stocks can disappear when one is hiking all day long), so only three hours were actually spent in the woods.

We decided to follow the advice of Brian Eccles and head to an area by Mosquito Lake. It was terrible. It had all been thinned in the 1980s, and there was still a fair bit of debris on the ground in most areas. The slopes were also quite steep. We did find chanterelles, but not in any large quantity. A good aspect is that the area did not appear to have been picked previously (no surprise), so the chanterelles that we did find were a good size. However, we spent the whole three hours either driving or wandering, so did not have a stellar harvest. On the way back to the buying station, we picked up Max and Derek. They had each picked about $120 worth of chanterelles, and claimed they had just wandered along the edges of the roads.

Back at the buying station. About 16 pickers cashed in at the buying station today, averaging around $60, with $130 being the high pick. Apparently, though, someone at one of the other stations had earned $300 today.

We spoke at length with a "professional picker," who was one of the first pickers back in 1982. He travelled around with the mushrooms, and this year had made about $6,000 on morels. Last year in Haida Gwaii he had earned $9,700 in two months picking chanterelles. He spends a bit of time searching buyers if he thinks it'll be worth his while. For example, local buyers purchase number one pine mushrooms for $12 per pound, but he found a buyer who will pay $25 (we think over on the mainland).

In previous years, this picker found it easy to average about 200 pounds per day, though this year he was averaging 40. He has been involved in other non-timber forest products (NTFPs), and is thinking of becoming more involved in such things as medicinal mushrooms. He was a buyer at one point but found it to be more work and less lucrative than picking. He claimed that in Haida Gwaii, the Haida have control of the NTFPs, and if a person crosses them, they will never be able to undertake any real enterprise on the Islands.

He told us that although the area in which we'd been today looked bad, it was an excellent place to pick in good years. In one area, for instance, he pulled about 1000 pounds out last year, but only 180 pounds this year. These areas are also good because many pickers don't like to have to walk through the debris, so it doesn't get picked out as fast.

Learned today:

- The most efficient way to harvest is to put in long days, as it allows you time to get out to a good place and pick. The time spent reaching a good spot is worth the effort, as driving or wandering around in search of something easy is not usually effective – at least not this year.
- Areas with debris or steep slopes are good to keep an eye on in a good year, as many don't want to have to put in the extra effort when picking, thus it will be more available.
- Following advice on where to go and pick is probably a good idea, but we've not found it useful yet. Finding one's own good spot and working it until the area has all been picked is the best route, rather than trying to find easier or more accessible spots. In fact, when we came back with such a low harvest, our buyer was surprised and asked if we'd been scooped, when in fact we'd just been dumb.
- Not many people were doing well this year, and many probably were not even making minimum wage.

Friday, September 24

Although it was raining today, it was a light shower and was still somewhat bright, so we headed out hoping for the best. We walked back to our good spot, using the disabled logging road as an access road for easier hiking. We planned to work the north and west sides of the peak, which we hadn't reached before. We parked at the bottom of the access road, and as we were gearing up another picker came and parked beside us. He'd obviously been picking for a few years by the way he spoke, and insinuated that he was an ex-logger. He hinted at where he usually went, indicating the forest straight up from the road (not up the direction of the access road). He suggested that it was a good area, he always found things there. Becoming true pickers, we suspiciously tried to figure out why he was telling us. Perhaps so we'd go up there rather than along the access road, so he'd decrease his competition? Or so we'd tell him where we pick so he'd get a scoop on a new area? Or maybe so that we'd understand that it was his area and not pick there? We don't know – it could be any of the three, or just a chatty individual. It just seemed strange that someone would so willingly talk of their prime spots to strangers. He also told us that in good years, cars are usually lined up along this spot. Today there was just he and us.

We headed off before him up the road for 30 minutes (which we had calculated out, using average stride length and number of strides per minute to be approximately 3km. We found this useful when using the maps). We began picking around 11:00 a.m. and picked straight until 4:30 p.m., working the slopes. We would leave our packs, work 300m or so down the slope then back up. The slopes were pretty consistent so it made orientation fairly straightforward. Being able to leave the packs was lovely, as they could get quite heavy and cumbersome. We did recall some people telling us never to put your pack down, as you'd never find it again, and we wondered at their orientation skills. It was definitely a possibility, but it only required a little forethought and awareness to avoid losing it.

The mushrooms we found today were large and the area was apparently previously unpicked. We also found a couple of blue chanterelles. They don't grow separately, as do the yellow chanterelles, but rather as one big heavy clump,

When we finished at the end of the day and headed back out, the truck of the fellow we'd met in the morning was gone, and a new one was there, as well as some other fresh tracks in the mud. We hadn't seen or heard anyone in the woods, though, which shows what a large area it is back there.

Back to the buying station, and more socialization as we warmed over the propane heater. A couple of pickers, not selling their mushrooms here, claimed that they had picked 100 lbs. each that day. We were very impressed, until the buyer quickly called garbage.

Standing in front of the lovely heat, our resolve broke down, and we decided to head into Sandspit for the evening to stay at a bed and breakfast. Much of our gear was wet, and it was still raining. To dry out our gear and our firewood, our technique was to put it all in the car and drive to where we had to go with the heat blasting, but it usually didn't dry quickly enough. Further, the thought of heading back to the camp, standing in the ice-cold stream to rinse off, then drying off with a damp, dirty towel was simply not appealing. The pickers were really wise building dry-shacks, especially those with the stove built in, as they were wonderfully warm and inviting. Our rationale, though, was that it would be good to see if we could run into some pickers in the town. Staying at the B&B, then, was really just furthering our research.

Learned today:

- We had taken 5 buying baskets in our packs, and one larger one. This worked far better in the rain and all of the mushrooms were fine. Our buyer was pleased.
- We stuck closer together today when working the slopes, with neither of us (okay, me) wandering off. This was a very effective way to ensure that all of the area was covered.
- Our buyer will do far more for us now – offering baskets, ties, cookies, coffee, heat, and importantly, information, such as on how everyone else was doing. Which really wasn't well.
- According to the buyer, people are very lazy this year. Many are apparently still living off of the bolete money, and pick only a few days for a few hours. He is quite disappointed by the lack of motivation.
- Some people at the camp do not appear to ever pick. Yet we'd seen the dry-shacks that they had erected, and we knew they'd been there awhile. We are unsure of exactly what they do there, or how they make a living. We have our guesses.
- The pickers at this camping area are very community oriented and non-competitive. People go together to pick at the other side of the lake, transported by whomever has a boat, whether it be a picker or a non-picker. Pickers often switch partners, going out with another who'd like to pick in the same area. They also will switch from picking with a partner to picking alone for a day or so. It's all a rather easy-going approach. Barb and Vixen mentioned that they had tried picking pine mushrooms in the Nass, but hated the competitive, almost aggressive atmosphere of the pickers, so they left. The more serious pickers, though, such as Max and Derek, do not vary their routine and always pick together.
- Many people do not appear to have good gear, and none have maps. Many, including our buyer, asked many questions of us about how we keep finding the same spot. A few (obviously talking amongst themselves about us) assumed that we had a GPS system, which we did not. It is rather confusing to us that they are so confused. Surely others have systems of keeping track of where they are, even without maps. We casually asked around and learned that virtually everyone carried a compass, though without maps they are surely missing great areas.
- Blue chanterelles are a bonus. The one clump we picked in few seconds brought us $10.

Saturday, September 25

Starting early (and starting dry), we decided to do some further research into our ideas about the use of maps. We had found our prime area with the use of our two maps, and it had given us a tremendous advantage. We decided to try again in another area, and therefore we identified the theoretically correct slope, aspect, and altitude on the topography map. We lined it up with our aerial map to ensure good forest coverage, and chose a good spot to explore. Upon reaching the area, accessed by a spur road off the north east end of the Lake, we found that there was still logging going on in the area. Even though the aerial map was recent, some new areas had been logged, which unfortunately happened to correspond to areas which we had chosen to explore. Other areas we had identified had forests which were too young to be productive for chanterelles, and definitely unpleasant to walk through. It wasn't possible to know the age of the forest from the aerial map– a forest development plan map would give a much better indication.

We drove a few of the roads in that area, and checked out any forest which appeared at all promising, but we found little. Just a few steps in the forest was usually enough to get the feel for it, and determine that there wouldn't be much in the way of chanterelles. However, we did see a number of other vehicles up in the area, so people must have been finding something. We don't know if they were simply checking it out, as we were (perhaps it was productive in other years), or if they actually had a known patch where they were picking. We, however, did not find enough to even fill a bucket, so after a couple of hours we decided that we were wasting our time in the area.

Even though it was already 1:00 p.m., we decided it would be worth our while to head back up to the spot which we knew was fairly productive. We thought that it might be possible to re-pick the area, as we had been told that when you see buttons, the area only needs a few days of rain and it will re-flush. We were hoping that the first pick we had done in the area, on Monday, would be ready to pick again.

We found it fairly easy to head straight back to the same area, though it is true that after walking in the woods for days on end, it does all start to look the same. We found the area we had picked before, and checked it out for re-growth. Unfortunately, it did not appear to have re-flushed much. There were a few new mushrooms, but not the volume we had assumed. We figured that this must be one more aspect of a bad year for chanterelles. We did find, however, that we had vastly improved in our picking methods, as we found a whole number of mushrooms which we had missed five days ago. We guessed that they'd been missed, not re-flushed, due to the size and condition of the mushrooms.

Interestingly, each time we went up to our spot we assumed that we had finished picking the area, but looking at the maps and exploring further reaches of the peak, we always found more to pick. This day was no exception, and leaving the pre-picked area, we headed north to find more patches. We picked far more in a few hours here than we had all morning, which served to strengthen our belief in finding a good area and sticking with it.

Learned today:

- This year the chanterelles simply weren't growing as well, as they did not re-flush in 5 days as they usually do in good years. Based on information from the other pickers, buyers, and locals, an area usually can be re-picked after only a few days.
- Again, finding a good area (or better still, a couple good areas) is key to a successful pick. It is important to recognize the difference between necessary exploration and blind perseverance. We found that through exploring, we discovered areas to which others had not bothered to come. However, we had to recognize that if we spent too much of our time exploring and checking out possibilities, we were wasting a great deal of time. It was a fine line between tenacity and naivete.

Sunday, September 26

We took the day off to explore Graham Island. We stopped for coffee in Sandspit at the Orange Roof Café, purportedly the hang-out for pickers. Although it was empty except for one local and the owner, we learned an incredible volume of information.

The local who was there picks chanterelles every year, so he was very familiar with the mushroom and with the industry. He claimed that chanterelles have a 6-year cycle (as opposed to the two year cycle which most say occurs), and that this year was definitely an off year. He was not impressed with the influx of pickers every fall. His term for the pickers was "degens" – short for degenerates. He went on about the lack of hygiene of the pickers (we were tempted to suggest that he try bathing in the cold lake or stream), and the lack of ethics. He claimed that the crime rate went up in the fall, that the pickers wreaked havoc on the land, and that they would follow the local pickers to see where they went, and try to scoop them. We found little of this to be true, though. As this was an off year for chanterelles (which most pickers knew), there were far fewer people out in the woods than normally. Perhaps the lesser volume of people, or the nature of the pickers who did stay for the season, affected what we observed. What we found, though, was that even though there were many people trampling through the woods in their searches – hundreds year after year – we found very little evidence of humans when we were in the forests. We saw many trails, but they were likely deer or bear trails due to the scat along them. We found extremely little evidence of garbage. Further, we constantly had other pickers suggesting methods of least impact to us, indicating that not only were they environmentally aware, but they wished others to be as well. With the issue of crime it is difficult to say, but we never felt the need to worry about our camp or lock the car, based on our feeling of the pickers we had encountered.

This year, there were approximately 60 people picking, but in good years, there are often 150 to 200 people who come in for the harvest.

He told us that the locals have territories which they nurture, and most are away from the main picking area. He said that the territory is based on a first come basis, and others recognize this and will avoid picking a person's area. The problem with the non-local pickers is that they don't know where someone else's territory is, and will pick anywhere. The locals will therefore use tricks such as completely picking a strip in front of their area, so that others will assume the entire area has been cleaned out and not bother entering. Then, in the area behind this, the locals will nurse the area by picking only the very large and mature mushrooms. To avoid others finding their spots, the locals will also park down the road a ways from where they intend to enter the woods, and either hike back or use an ATV. Due to their knowledge of the area, apparently in a good year it is easy for a local to make $600 a day. For many locals, a 20 minute hike is a long one, as they know the easy access areas.

Both the local picker and the owner/waiter confirmed that many locals pick to supplement their incomes. They sold in town, rather than at the buying stations, and usually to one of the two local buyers, Shirley or Monty.

She told us that buyers discourage button picking – something we had also learned from our buyer. As both the picker and the buyer receive money per weight, it makes sense to wait until the mushrooms are larger before harvesting them. The chanterelle mushrooms are never sorted at the buying station, but they are sorted into mature and buttons at the main plant. The buttons are actually sold for higher prices to restaurants.

Learned today:

- There is a big rift between the locals and the non-local pickers. We noticed that even in the picking area, there was little inter-mingling.
- Many locals rely on the income from the commercial mushroom industry.

Monday, September 27

Today was the last day, with our flight leaving at 8:00 p.m. We had agreed to meet with some people from the Ministry and others involved in the project, so we would not be picking this day, which was a little disheartening later when we learned that the price of chanterelles paid to the picker went up to $7.00 a pound that day.

We met up with the entourage, and felt quite the traitors as we fell in line with a parade of Ministry vehicles and drove into the picking areas around the Lake. We knew that not only would most people recognize our vehicle, but would take note of it in this train. Although we had never noticed any outright ill feeling toward the Ministry of Forests, we knew that most pickers we had encountered were not impressed with anything relating to control or regulation.

We were rather glad that this meeting had coincided with our last day, as we felt somewhat sheepish. We had long since blown our cover of being "just another couple of pickers". As mentioned earlier, the grapevine here was exceptional, and rumour had flown about us since the beginning. On the third or fourth day our buyer had asked outright, in front of other pickers, what research we were doing. He had known that we were connected with Sinclair Tedder (MoF), but I think asked for the sake of the other pickers, as well as ourselves. We told the truth of the matter, and no one really seemed to care once it was out in the open. Still, it was an odd feeling coming in with a whole other side of society.

Finished up, packed-up, and headed out, very reluctant to leave such a beautiful place. While there, we had felt removed from what we refer to here as "real life". Living in a tent and in the woods, eating what you gathered yourself that day, and relying on the whims of nature pulls one back to what is actually "real life". Spending time with people who hold a different perspective on time, ethics, and responsibility also leads one to rethink societal priorities. It is easy to see why pickers chose this life, even when the weather is against them, the mushrooms refuse to sprout, and the daily wages are barely enough to survive on. The mushroom industry provides far more than wages for most who enter into it.

7.3 Harvesting Summary

Time

We ended up spending an average of about 7 hours a day picking. It is difficult to estimate how much time was spend locating and how much time harvesting, as the two were so closely intertwined – this year, at least. We did find that usually at least two hours were spent in hiking in and from the main harvesting area, but while hiking, we continued to look and pick. Conversely, while picking, we continued to hike and search. We know this to be true for many of the other pickers. It would seem some of the people who were picking this year would put some time into hiking into a spot, and would do quite well. Those who did not hike as far tended to do not as well. Most people would put in about 5 to 8 hours of picking, when they did pick.

Time spent getting to the buying station for us was minimal, as we had a vehicle. For others it was more significant, as we would occasionally pick up pickers hiking along the road to the station. When at the buying station, we would usually spend about half and hour to an hour, depending on who we could find to chat with. Only once did we have to wait for someone in front of us to finish, although apparently in years past there have been line-ups of 30 people or more waiting to sell their mushrooms. We would spend a few minutes watching the buyer sort our mushrooms (although this time became less and less as his trust of our quality increased, to the point where occasionally he would not even bother opening the baskets to check). We would stand and warm ourselves by the heater, drinking coffee and watching how well others had done that day. A few others had this same habit, and many people from the campsite wandered in and out of the station when it was open.

It would seem that for most people, once they are at Skidegate Lake, they are there for the long haul and will stay for the entire season of the mushrooms. This usually means August until the beginning of November. This may be partly due to the fact that it is quite expensive to get onto the Islands, so once there it is worth the while to stay. No one whom we had spoken to had actually flown onto the Island, though the ferry is apparently also quite expensive.

Cost

We found the cost of living while picking to be quite low. The initial start-up costs could be high if one wanted to have good gear, as it would require proper packs, raingear, thermal clothing, boots, camping equipment, knives, and perhaps a water purifier (three people developed giardia from drinking from the streams while we were there). However, it would be possible, as we saw, to decrease many of these costs. People constructed dry-shacks instead of tents, salvaged old stoves, and boiled their water.

The food costs were slightly higher than on the mainland, though one simply had to pick and choose what to buy. We noticed that many people stuck with a low budget and bought the staples, such as white bread and pasta. This was understandable considering the increased food consumption from the high level of activity. We found that a constant supply of trail mix was a wonderful thing to have in the woods. There were a few things which one could eat off the land; obviously many mushrooms were at hand, and berries, such as huckleberries, wild blueberries, salal, and blackberries were prolific and delicious. The lake also contained trout, and salmon were running in the river.

Many people did not use vehicles, so avoided this cost. The cost of vehicle rental was quite high, however to bring a vehicle over from the mainland on the ferry is also very expensive. Once there the cost of gasoline is high, although not many kilometres would usually be put onto the vehicle for harvesting alone. We found that a 4X4 would be a definite asset in access, if one was willing to spare the expense.

We didn't notice any picker purchasing anything from the area other than food, alcohol, gas, and laundry services. People did not stay in Bed & Breakfasts or the hotel, though they did eat at the coffee shops and restaurants. None that we knew had purchased any tourist items, though some undoubtedly bought supplies from places such as the hardware store.

Even in a bad year, it seemed that it would be relatively easy to cover daily costs, and have extra for savings.

Ecosystem effects

It is difficult to estimate what the effects of the harvest are as we were there so little time. What we did notice, however, was that many of the pickers gave us tips on minimal impacts, indicating that they themselves followed ethical rules of harvest. Although we wandered the woods endlessly, we saw little evidence of humans, even though the commercial harvesting has been occurring since at least 1982. We saw only two pieces of garbage over our 7 days in the woods, and the trails we saw, although probably used by humans, appeared to be deer and bear trails. We found that the mushrooms tended to grow well by the sides of trails, so they were apparently not affected in the short term by continuous harvest.

We heard a few complaints about the amount of material, which was left in the campsites at the end of the season, but from the accounts of the pickers, it was usually utilized the following year.

Appendix A: Summary of public responses: Masset, Queen Charlotte City, and Sandspit open houses, January 2000.

The researchers made four trips to the Islands and held two series of open houses. The first set of open houses was held in August of 1999. The second set was held in January 2000 after the release of a draft report, which was circulated to get further feedback from the community. Additionally, meetings were held with various community representatives the results of which are contained throughout the body of the report.

The following summary provides the feedback from the January, 2000, open houses held in Masset, Queen Charlotte City, and Sandspit.

Masset, January 13, 2000
Queen Charlotte, January 14, 2000
Sandspit, January 15,2000

Introduction:

Comments made during the three open houses held to discuss the draft report reflect a number of strongly held concerns and convictions regarding the potential further development of non-timber forest products on the Queen Charlotte Islands/Haida Gwaii (QCI/HG). We have attempted to faithfully report these comments; however, we apologize if we have misrepresented or failed to adequately capture the intention of community members who spoke at these meetings.

As the following notes demonstrate, there are significant differences in attitudes expressed in the three communities. Individuals in Masset, especially the Haida people, are the most opposed and individuals in Sandspit (the current focus of NTFP harvesting in the Islands) are less opposed to development, although they do have many concerns about the extent of local benefits and the degree of local management that would result.

It should be emphasized that comments made at public meetings may not be representative of the views of all community members, or even a majority of members. Community meetings generally attract those who feel very strongly about an issue - frequently those most strongly in opposition. Further, discussion of any development issue on the QCI/HG, as we have noted earlier in the report, is highly affected by a host of political issues and processes. It is often difficult to separate the response to one particular set of recommendations from more general concerns about how resource and other issues are being dealt with on the Islands.

Despite these cautions, we believe that the comments made at the community open houses reflect and confirm serious concerns and issues that must be dealt with prior to, or in the process of, any further commercial development of NTFPs. Many of them reflect our own concerns, and those of many others engaged in research, management, or development of NTFP products and services.

Open House: Masset, B.C. January 13, 2000.

Presenters/ Authors:	Darcy Mitchell, Mitchell Consulting Associates Sinclair Tedder, Ministry of Forests Ramsay Farran, Mitchell Consulting Associates Maria Wilkie, recording
Attendance:	40

The session began with introductions of the authors, and a review of the purpose of these sessions: to receive suggestions and input on the draft report "Seeing the Forest Beneath the Trees: The Social and Economic Potential of Non-Timber Forest Products and Services in the Queen Charlotte Islands/Haida Gwaii."

The authors have talked to individuals and organization representatives in all communities. They stressed that recommendations are subject to sustainability studies, resolution of issues surrounding rights to the resource, and ownership being established. The authors are aware of these concerns, and that there are other processes that are occurring between the Haida government and the provincial government. The intent of this evening's presentation and the report is to present information, not to engage in a political discussion.

The initial intent of writing this report was to look at the economic potential of the non-timber forest products industry. However, it became apparent early in the process that the report would have to include a discussion of other issues although it is beyond the scope of this report to make specific recommendations about these concerns.

The authors then presented an overview of the contents of the report, following which members of the audience made various comments.

Statistics used in the report:

A participant asked whether statistics on the Japanese market were included in the report. Although these statistics are not included in the report as Japan is not a market for Island mushrooms, they are available, and S. Tedder offered to share these with anyone interested.

The statistical information in the report consists of the declared export value per pound, as reported by Statistics Canada, and anecdotal information collected from exporters and harvesters. These numbers should not be relied upon as a firm indication of production levels, but do present an idea of the general nature of the local industry and an estimate of the size of the harvest.

An observer commented that no one on the Islands has ever received $7.50/lb for chanterelles, and expressed his view that buyers are skimming off the top. Another observer stated that the $.50 paid to buyers as stated in the report seems low. There is a variation in prices. He's heard that the amount paid to buyers fluctuates from $1 to $3/lb. Buyers on the Islands pay less to pickers than they should. Buyers have told some pickers that at the beginning of the season buyers are given a set rate, but the amount paid to pickers fluctuates.

The authors commented that their research did not indicate that buyers were skimming. Prices for fresh mushrooms can fluctuate each day with the international market price: prices are not set at the beginning of the season.

Current local use & traditional use:

Individuals made the following statements regarding the current local and traditional use of NTFPs:

I'm concerned about this report. This is our livelihood. My grandparents taught me about these things. I'm upset because our resources aren't for sale. This is what we live on. I don't agree with commercial use of them on these Islands. In other areas they've depleted the floral products. We can't eat money. One meeting happens, then more meetings, and then things get out of hand. It breaks my heart. The MoF must have no trees left in the forest, so they are looking at everything else.

I was contracted to do forestry work a few years back. They wanted me to look at cutblocks for medicinal plants. I told them where they were, but they cut them all down. It bothers me when people don't listen to me. I've put up food all my life, and I'm teaching the children about it. Mushroom picking is wild. Off-island pickers are killing each other. I wish that we could forget about commercializing. We need these things for our survival.

I was brought up to respect the land. The ancestors had so much knowledge. They were doctors, and lawyers. The government took our children away and turned our thoughts around. Our forefathers knew when the growing seasons were, when to pick plants. Why does the government try to teach us what we know? I know when to pick berries, and when to leave them. We won't survive without these things. There was no value put on the fish, the berries. I feel like I'm the richest person in the world because I have these things to survive on.

There are species listed in the report for potential commercial harvest that should be removed. The authors were asked to consider the impacts of releasing the report. People depend on traditional foods. The rate of unemployment in the community of Old Massett is 76%. People depend on gathering berries and other things found in the forest for subsistence. The information may be intended for on-Islanders, but it will be used by off-Islanders.

It is incorrect to refer to weaving as a craft. Currently, spruce root weavings sell for thousands of dollars. If these materials are mass-produced, the product will be devalued.

Regulation:

Throughout history, for thousands of years, the Haida have had strong rules on the use of berries, etc. What's missing at this forum is a discussion of rules and regulations of the Haida.

The authors have said that there are things that have to happen before the Ministry of Forests puts legislation into place. Is it their position that issues surrounding tenure and treaties be resolved before establishing regulation?

The authors were also asked for assurance that the Ministry of Forests is not writing up regulations based on this report. In Alaska public consultation sessions were held, and six months later the government introduced regulations.

The authors commented that management recommendations to government are beyond the scope of the report. As researchers, they cannot control what the MoF does. It is their opinion that resolution of many questions surrounding NTFPs is linked to a resolution of tenure. This issue continues to be debated. Many First Nations see NTFPs as an opportunity to locally direct the use of the resource, and profit from it.

The MoF began work on the regulation of mushrooms in the early 1990s. The authors cannot guarantee that the report won't be used if regulations are drafted. But the hope is that the report could improve any potential regulations by providing local input.

I am sick and tired of timber being hauled off by multi-nationals. I don't want to see the salal taken away, or any degradation of the salal. There should be a campaign for local, sustainable ecologically certified NTFPs. All the pickers and buyers should be local. Jobs should go to the communities with 76% unemployment.

There must be areas set aside for non-commercial use, areas that locals can use without restriction. Reserves should be designated where no logging would occur, and the area would be harvested for mushrooms. The Haida should not be required to obtain permits. They've taken care of these things. These Islands were fruitful 200 years ago. The forest is diverse. We need diversity in the way we take care of it. The forest is important to us. I don't want to see it destroyed by a MoF bureaucrat.

Our foods have already been regulated out of existence. Fish boats are being sent back by the Dept. of Fisheries & Oceans, while sports fishing continues in the same areas. Once the government regulates something, it disappears.

I'm opposed to any regulation on berries or mushrooms. Generally local people aren't hired by off-Island buyers to do the picking, because they're too expensive and because they're knowledgeable.

Carrying out this research, and asking these questions on NTFPs is like you coming into my house and looking in my cupboards. We've been regulated to death. People here make their living off this. Off-islanders come in, and they rape and pillage. We're not putting up with it. I hope that you hear that as a clear message.

When government is involved, they almost wipe us out. The government regulates our food, our cedar. The food that we eat has no price value. Now this report gives it a dollar value. We're running out of things to give away. You're putting a price on what we don't pay for.

In 1919, or 1924, Thomas Dorsey came to the Islands, and reported that Old Massett had 200 boats. There was no unemployment, no police – Old Massett was the best community on the Islands. We're now out of the fishing industry. In Oregon, people cannot take even one shell off the beach. My sister wanted to go into the forest to get roots for weaving. She was told what areas she could go to. She drove up steep logging roads, to the area designated for taking roots. The trees were twisted, begging not to be touched. She couldn't take any bark.

We depend on this food. It isn't a choice for us. This is part of us. The logging industry has taken our wood. Our traditional areas are wiped out. We're told that we can't go to areas that we weren't in before. A person in our community was building a smokehouse. He had to get a permit for the wood. I will never get a permit from the MoF. You make good people have to break the law. The Haida have our own laws. I have rules in my society. I can't visit certain areas without the permission of a family in my community. We're stuck. We have to have some regulation. The regulations should start with the Haida people. We've more than shared everything.

Scallops, peat moss, kelp and spring salmon have all been regulated, and marketed – these have all been cleaned out. Any discussion of commercial opportunities for venison, medicinal plants, herbs and berries should be removed from the report. Cone picking has become too big of a production – it's out of the community's hands.

Fishing at the Yakoun River is sacred. It's a time to reconnect with the spirits, and the land. I was fishing the Yakoun, and a fisheries officer came by and asked how many fish I'd caught. This was a personal time. I asked him if he was as concerned with the timber companies and how many fish they've killed. But he was the wrong person to ask. We could complain, but will our voice be heard? The only way to regulate is to do it ourselves. Just like at Lyell, just like the razor clams: we stopped that because it went against who we were. How much more generosity to we have to generate before we get it back? Who is sharing? This is an issue we need to talk about. I hope we will come to a balance, to an understanding of each other.

It's a foreign issue with white people: they see these things as a commodity. The land is who we are, and when you take what's left, we have nothing left. The abalone is gone. Fisherman were catching the excess of their quota: they were told to dump the excess overboard. That's regulation. More thought must be put into how we protect the resources we still have. The people with real knowledge are here.

The authors commented that some coastal First Nations communities are choosing to manage local commercial use and subsistence use as one. They have been told by some members of the Haida community that there should be licensing of pickers on the Islands. The information included in the report is already widely distributed. The report is an assembly of information intended to assist people in developing local control and regulation, if that is what they want to do.

Local benefit & Local control:

The cat is out of the bag: the report is done. Off-islanders can now use this report as a road map. The challenge here is to create local regulations, and establish our comfort level in this area. If all we do is complain, someone else will tell us how to run this new industry. There is a very small window of opportunity here: we have the power to establish rules, and enforce them. The authors presenting here tonight are not the regulators. They're provided information, and it's good if we can use it. We need to set regulations prohibiting off-Islanders from picking here until they talk to the local community. The Council of the Haida Nation and the band councils need to get together to determine an approach.

It is typical that people make statements at public meetings, but when will the meetings within the community begin? When will this process begin in Old Massett and Masset? Promises have been made by the Haida government to hold meetings, but we haven't had any yet.

In response, a participant commented that the Islands Community Stability Initiative (ICSI) has attempted to talk to the government about a Strategic Land Use Plan for the Islands. The CHN wanted to develop a local plan. ICSI had a conversation with Victoria, and couldn't go forward. But this Saturday, someone from Victoria is coming to the Islands to talk about the SLUP. Public meetings could begin in 2001. It has been eighty years since the government talked face to face with the people here.

Web pages have been set up that give prices for things like razor clams and mushrooms. Razor clam charters are in operation on the Islands already. This information is already out there, and things are already happening without local input.

We have no control over demand and world population. The world is staying the same size, and our population is increasing. We need to control the use of NTFPs locally, or we'll lose them. Twenty years ago Masset was the world leader in crab fishing. We didn't have a large fleet but it was sustainable. Other fisheries were declining, and those fishermen started fishing crab. Limits were suggested, but people didn't want rules. Off-islanders will come here. If you don't have local control, you lose.

Most resources are shipped off these Islands raw. We have to have tertiary, secondary management.

Islanders are self-involved. We don't know the rest of the world, but half the things we use come from off-Island. We take some, but not all of what they have. We should learn to share.

I'm opposed to the whole report. It doesn't meet the needs of Islanders. Our communities will decide how we should cooperate, not off-Islanders.

To establish local control, we need more politics. The fastest way to get local control is to establish a municipal government. We could then development an official community plan, zoning and process for granting business licences. This was done successfully in the community of Wood Buffalo, and they had 40 000 people, three First Nations and a Park to bring together. We could establish a municipal government and get local control without prejudicing Haida land claims if we can establish a Haida/non-Haida relationship. If we don't take control of this, someone else will. We need to settle land claims, and develop a local municipal government.

Environmental implications:

Baby's breath once grew all over the Okanagan. It's gone now. I'm seeing more and more salal harvested on Vancouver Island. Young people make money now, but in 10 years it's gone. If people in New York City have gotten a taste of the salal berries, the demand will increase, and we can't fill that demand. Do we have to give it all away?

The authors commented that a tenet of the report is that sustainability studies must be completed before commercial industry is promoted, to determine sustainable levels of harvest. A participant asked whether this sustainability would be the same as forest sustainability: it's defined by Victoria, not by the people that live here.

Tenure:

The report states that NTFPs are resources owned by the Crown. However, theoretically, the crown does not own the land. The Haida are in the midst of the treaty process. These lands are encumbered. This fact should be included in the report.

Consultation:

I was once invited to participate on a board at the Chicago Field Museum. They were showing a northwest coast art show. When we arrived we provided input and recommendations to the plans to fit our philosophy, but we found out the plans were already set. Why were we invited? Two years later at the show, our names were written down as people that had been consulted.

My dad had to get approval to sell Haida food. It's a lot of work to gather our food.

Art has always been a commodity in our society. We traded with the Klingit tribe, and Bella Bella. Our canoes went to Alaska, and the mainland.

National Geographic once asked me, and other indigenous people in British Columbia, for input on how the magazine should celebrate the arrival of Columbus. There has been a destruction of spirit and land since contact. All native people shared this view. National Geographic changed their tune after talking with us.

A sockeye study was carried out at Yakoun River. They did not consult with the Haida. I urge more consultation with the people who have local knowledge. We may not have a piece of paper, but we have knowledge.

A participant asked the presenters whether they were going to list this session in the report as consultation with the Haida. She stated that she does not want her comments at this session to be listed as Haida consultation.

South Moresby Forest Replacement Account (SMFRA):

I have a beef with SMFRA. The majority of people making decisions are non-Islanders. There are only two local representatives, and they can't vote. This study does not meet our needs. You talk about the venison industry, but the government wants to get rid of the deer because it's eating the cedar. The right hand doesn't know what the left hand is doing.

An observer asked how much this report cost, and if it could be bought from the authors. The authors commented that SMFRA owns the report, and the information is already public knowledge – this report just consolidates it into one report. The observer recommended that the title of the report be changed to "Social and Economic Impacts of NTFP Maximization."

The session concluded with comment by the authors that when doing work in other communities, they were there at the invitation of those communities, and that their research is more productive in such circumstances. They thanked participants for their comments and welcomed any further input. Written comments on the draft report will be accepted until January 31, 2000.

Open House: Queen Charlotte City, B.C. January 14, 2000.

Presenters:	Darcy Mitchell, Mitchell Consulting Associates Sinclair Tedder, Ministry of Forests Ramsay Farran, Mitchell Consulting Associates Maria Wilkie, recording
Attendance:	16

The presenters introduced themselves and informed the audience that the purpose of these sessions is to give the public the opportunity to provide input to the draft report "Seeing the Forest Beneath the Trees: The Social and Economic Potential of Non-Timber Forest Products and Services in the Queen Charlotte Islands/Haida Gwaii." The purpose of the report is to provide baseline information to the Islands for their review. The report is a collection of data for local people to use if they wish.

In preparing the report it became clear that there was a host of issues, which do not relate directly to the mandate of the report, but have major implications for the issues discussed. Ninety percent of these issues have emerged in every community where NTFPs are increasing in importance for the economies of the community.

Very little research on the biology of NTFPs has been done to date. The authors suggested that there is a correlation between this emerging industry, and the west coast fishery. It is not until the "killer spike" hits a resource area that research is carried out. The intent of this report is to research the issues before the industry grows further.

The authors stressed that any recommendations are subject to First Nations' issues being addressed, and sustainability studies being carried out. The recommendations must be considered within the whole context.

While completing local research, it became apparent to the authors that the general business climate on the Islands was not welcoming to outsiders. Therefore, recommendations focussed on opportunities that can be taken advantage of by local people. A concern has been raised that this report is telling people information that has, till now, been kept secret. However, this report is a gathering of information that is already widely known among those interested in NTFPs outside the Islands

The authors presented an overview of the report, following which participants raised the following points regarding recommendations and content of the draft report.

Consultation:

A participant stated that an issue this big should involve all 6000 people that live on the Islands. To gauge the real opinion of Island residents a door to door survey should be done to see what people want to do. There are a lot of mixed feelings among the people of these Islands. People don't want to see the Islands ruined, like the fish and the forests have been ruined.

The authors commented that their research involved speaking with over 10% of the Islands population. It was recommended that organizations including SMFRA be contacted for funding to carry out door to door surveys. However, SMFRA's funding for this year is currently allocated and the Account in its current form is set to expire on March 31, 2000.

Current Local Use & Traditional Use:

A participant spoke about her experience: I take my four children out berry picking. Our grandparents taught us about these things. Many of these species are used for healing. Do you know what each plant is used for? We've been told not to pick berries at the roadside, because they're poisoned by exhaust. We don't pick at Rennell Sound because insecticide was sprayed there. Off–island pickers could come here and pick these poisoned berries, and poison the world.

We have a problem with off-islanders coming here. They are killing the deer. Deer is the purest of the meat we eat. We use the deer in our ceremonial dress. You should think long and hard about what you're doing.

A participant stated that she was surprised at the information regarding floral and Christmas greens. For her own research on the topic, she contacted the local florists: they pick their own greens. The local florists were not surveyed as part of this report. Based on this information, she questioned whether there really is a local market. Local floral retailers pick their own greenery to reduce the cost of the floral product that is expensive to transport here.

She also expressed concern with the examples provided in the report on farmed venison. Someone from off-island could read this report and assume that it is relatively easy to establish a game farm on the Islands. However, it is well known locally that the Rod and Gun Clubs will not tolerate commercial game hunting, or farmed venison on the Islands, because this would preclude people hunting for themselves. The report indicates that the agreement of the whole community is needed to approach the Ministry of Environment, Lands and Parks and introduce the idea of commercial venison industry, but there are Island groups that have already indicated that they are vociferously opposed to this. That should be indicated in the report.

A participant commented that as someone who collects a small amount of berries for personal use to make jam, he feels threatened by this report. This report puts a crippled horse before the cart. It is premature to write this report before researching what is already happening. This report doesn't talk enough about what's going on now on the Islands. It is laying these recommendations on top of what is already happening.
The authors agreed that it must be made clearer in the report that business and employment opportunities must be considered in light of other values. The recommendations are all offered subject to appropriate sustainability studies being completed.

Regulation:

Participants asked whether the Ministry of Forests (MoF) is proceeding with any forms of regulation. The authors explained that the *Forest Practices Code* allows specific recommendations for non-timber forest products, but to date the MoF has not proceeded in this area. The MoF does want to understand the products and industry better, and currently 50% of Sinclair Tedder's work is devoted to NTFPs, and other staff are carrying out research as well.

A participant stated that we should not be imposing a provincial model of regulation on the Islands. If the community thinks that regulation is necessary, it should be implemented by local people, the Council of the Haida Nation or any organization they appoint. The traditional regulations for NTFPs should be determined first. There must be local management through whatever channels locals develop.

A participant commented on the theory of the "tragedy of the commons." He stated that this concept was introduced thirty years ago, and was challenged by academics. It's been suggested that other matters led to the tragedy, besides an area being unregulated.

Local Benefits & Local Control:

A participant commented that this report should be looking at the impact on people. There's good opportunity, but good for whom? It's not a benefit to us, it's a benefit to off-islanders. But there are 6000 people on-island that need to benefit. People once talked about the local benefit that sports-fishing lodges and mushrooms would bring to Island communities. But only Canadian Airlines benefit – the people using these things don't spend money locally. Loggers fly into the logging camps, then fly out to spend their money. The people of these Islands are rich in culture and that's how we want to stay.

The group then briefly discussed a report on NTFPs being prepared by the Islands Community Stability Initiative. The ICSI has carried out test marketing for Island berries, and the authors recommended that interested individuals contact ICSI for further information.

Economic Bias:

A participant stated that this report has a serious economic bias. More emphasis must be made on sustainability and biology, and recommendations for sustainability and biological studies must be loud in the report. There may be a balance that can be achieved, and there may not be. There are social implications that are not acknowledged in the report. What's going on now must be acknowledged. This report makes it sound like NTFPs can be an economic boom for the Islands, when there is really much more work to be done.

If the medium is the message, the message of this report is all about economics. The social benefit of NTFPs on the Islands may already be maximized. Perhaps this economic opportunity needs to be regulated.

Environmental Implications:

A participant stated that he very sympathetic to the comments he's hearing tonight. Fifty years ago we could have been sitting in this same room, discussing opportunities for heavy commercial forestry and today we're down to the last pieces of wood. The Ministry of Forests needs to take this bull by the horns and carry out the research so that we can understand these things better. The information the MoF is currently collecting needs to come back to the "commons", the people that live here.

What's to stop the timber companies from accessing NTFPs? More government spending should be done on researching the environmental implications before proceeding with this.

This report lists prices for different forest species. A participant commented that the keywords of the report are commercial exploitation. Environmental concerns warrant just half a page. Based on this report, people might think they could make $300/day picking berries. What are the impacts on lichens, on bears that eat the berries? This research isn't happening now, but this report promotes more exploitation. Logging alone leaves little in the forest. You've provided people the opportunity to come here and exploit these products.

The authors commented that their research does not indicate that there will be a "stampede" towards the harvesting of NTFPs, which means communities have time to develop their own strategies and forms of local regulation.

The authors informed the audience that written comments on the draft report would be accepted up to January 31, 2000. Further questions or comments are welcome – participants were invited to contact the authors directly.

Open House: Sandspit, B.C. January 15, 2000.

Presenters: Darcy Mitchell, Mitchell Consulting Associates
Sinclair Tedder, Ministry of Forests
Ramsay Farran, Mitchell Consulting Associates
Maria Wilkie, recording

Attendance: 12

The authors thanked those present for attending this session. The purpose of the meeting is to provide the public with opportunity to provide input into the draft report "Seeing the Forest Beneath the Trees: The Social and Economic Potential of Non-Timber Forest [NTFPs] and Services in the Queen Charlotte Islands/Haida Gwaii."

In preparing the report it became clear that there was a host of issues, which do not relate directly to the mandate of the report, but have major implications for the issues discussed. 90% of these issues have emerged in every community where NTFPs are increasing in importance for the economies of the community.

The authors stressed that any recommendations are subject to First Nations' issues being addressed, and sustainability studies being carried out. The recommendations must be considered within this context.

While completing local research, it became apparent to the authors that the general business climate on the Islands was not welcoming to outsiders. Therefore, recommendations focussed on opportunities that can be taken advantage of by local people. A concern has been raised that this report is telling people information that has, till now, been kept secret. However, this report is a gathering of information that is already widely known among those interested in NTFP outside the Islands

Included in the report is a list of species commonly found in the coastal western hemlock zone that can be harvested and sold commercially. The authors welcomed additions to this list, or deletions of species that don't exist on the Islands.

The authors presented an overview of the report following which participants raised the following points.

Statistics used in the report:

The authors explained that they used export data from Statistics Canada where possible. However, not all exporters register mushrooms under the category "fresh or chilled." The local information is anecdotal, collected from buyers and pickers.

Because the industry is currently unregulated, there is no way to collect reliable information regarding the amount of mushrooms and other NTFPs currently harvested on the Islands, or the Islands' share of British Columbia's total exports.

Regulation:

A participant commented that the topic of discussion at the first open house in Sandspit centered on the fact that this industry is currently in the "gold rush phase." Concerns were expressed regarding any regulation. The authors were asked for regulatory models that could be applied from Europe or North America.

The authors commented that the Pacific Northwest is well ahead of British Columbia in terms of NTFP management. In Oregon a program is in place where pine mushroom pickers are educated, and require licences to pick. This has been in place for at least ten years and they are currently achieving over 90% compliance. The regulations came about in response to problems associated with large numbers of people coming in to pick mushrooms. Something had to be done to deal with it. There is a large amount of private land in the Pacific Northwest, and many of these landowners wanted to make money off their land without cutting the trees. Some harvest themselves - others issue permits or leases for NTFP harvesting.

The authors have met with many people who are involved with the regulated NTFP industry in Oregon, and these people are willing to share their data and visit areas to discuss their experience with management.

The group then discussed the issue of transport of NTFPs. Harvesting of special forest products, including Christmas trees and firewood, requires a permit from the government. However, the harvesting and movement of NTFPs within Canada is currently unregulated, although exporters are required to report transport of the product from the country.

The authors commented that it is likely that NTFP harvest will eventually be subject to some sort of management regime. The issue of tenure always arises in such discussions. Currently, an individual could tend an area for increased mushroom yield, only to have someone else visit the area and pick all the mushrooms. Someone else would benefit from the tender's work. There's no direct incentive for people to manage an area for NTFP values (commercial or otherwise).

There are provisions within the Forest Practices Code that allow for management of NTFPs, but the government has not pursued this avenue. The Community Forest tenure is the only tenure existing currently that allows for management of NTFPs. Certification of NTFPs may require regulation. Communities should think about different approaches. For example, communities could insist on municipal business licences, which could be developed to meet local concerns.

A participant commented that when she first moved to the Islands, she and her husband noticed that permits that were normally required in other communities were not required here. That may not be a positive thing in all cases.

A query was directed to the authors regarding wages paid to pickers, and whether they are lower in areas where the NTFP harvest is regulated.

The authors commented that there are many rumors in this business. Pickers tend to get paid more on the Queen Charlotte Islands than other areas, for the same species, i.e., chanterelles. However, some suppliers are shifting their focus away from the Islands, because of the higher price. There does not appear to be a correlation between picking in regulated areas and wages. Timing of the harvest, and markets are the determining factors for wages for pickers. Wages can be determined by market conditions in Europe: for the most part, they are not determined locally. As well, the labour force in this industry is transient, and would move to another picking area where they were paid more if wages were not sufficient.

The authors explained that various incentives could be offered to encourage people to obtain permits for picking. Training could increase the quality of pickers who come here. There is opportunity to train urban visitors who may wish to visit the Islands and pick for a limited time, then explore the rest of the Islands.

A participant commented that the issue of garbage being left at the buying stations and picker campsites could be addressed currently, if the MoF took a more active role during the mushroom season. Some buyers are happy to clean up their sites, but they feel that the MoF is ignoring them. The MoF should welcome them to the site, rather than pretend they don't exist.

The authors commented that the local MoF recreation specialist does make his presence known at Skidegate Lake. Buyers can put pressure on pickers to clean up as well.

A participant inquired about the regulatory system currently established in Poland. The authors commented that in the change from communism in Poland, soldiers who were no longer required began picking mushrooms. However, there is a concern in Europe over products that come from areas impacted by Chernobyl.

A participant recommended to the authors that regulatory models in India be researched, as these may be more analogous to the situation on the Islands.

Access to NTFPs:

A participant stated that he thinks a class action suit should be filed against the MoF to stop them from deactivating roads. These roads are used to access areas for NTFP harvest and recreation.

The group discussed this issue, raising various points. Twenty years ago environmental groups sued the government because it was found that 25% of the forest base was being removed by roads and associated failures. The deactivation of roads is not vindictive or mean, it's in response to environmental concerns. Entire salmon populations could be wiped out by one failed road.

However, the participant commented that in some cases deactivation doesn't make sense. Roads are deactivated, then reactivated. The deactivation is done during the rainy season, using machinery in the pouring rain. The issue is whether some areas should be exempt from deactivation. A participant noted that Weyerhaeuser is now reactivating the Haans Mainline. He stated that the public needs to go to meetings and tell the companies which roads they want left open. The company needs to report this to regularly monitor the roads and report on their condition. They should be compensated for this monitoring. Other businesses using roads should pay for their upkeep. That's a form of regulation. NTFPs are crown assets. There are fees attached to accessing this resource. These fees could contribute to a general reserve to maintain the roads.

The author commented that the provincial government is responsible for providing access to the forest. The question arises whether you preclude access by charging someone to use the road.

NTFP Management:

A participant asked whether there is evidence that people have enhanced production of NTFPs through site management. The authors commented that in Japan areas are being managed for increased NTFP yield with some areas achieving 400% increased productivity. Europeans are inoculating seedlings with chanterelles. Pruning enhances the productivity of mushrooms. Studies have shown that salal has a number of mycorrhizal relationships. There may be real opportunities to enhance mushroom yield through site management.

A participant referred to a statement in the report that mushrooms are being lost to timber harvesting: loss is a harsh word. If you don't log the timber it gets too old to support chanterelles. Second growth stands produce the chanterelles.

The authors commented that timber companies currently have no incentives to manage for mushrooms. No one will invest in facilities if their investment is not protected in some way - usually by some form of property right. The Community Forest is an opportunity for the view of the community to develop and demonstrate forestry management models that take values such as NTFPs into account. The participant then suggested that NTFP management could create community opportunities. Sandspit residents could farm mushrooms, tending a site year round. Their presence could contribute to the whole community.

Current Local Use & Traditional Use:

A participant commented that property and distribution through current social systems is at risk if some of the recommendations in the report are implemented. There are places that are visited recreationally. If things were missing because an entrepreneur risked his capital and commercially harvested some of the special things in that area, that would be upsetting to people who use these places for recreation and other purposes. An entrepreneur has to fit within existing systems, not on top of them. Right now we have somewhat of an understanding between communities about these things. The report should be changed to reflect this.

Local NTFP Opportunities:

The authors commented that just because an area has good business potential, it does not ensure success. There must be community will and individual initiative for the industry to succeed on the Islands. The Haida have made it abundantly clear that they have significant concerns on what the impacts might be of a product people rely on for subsistence being harvested commercially. There is potential for local solutions to be reached.

The authors strongly advise that a marketing scheme be developed for the Islands, and perhaps a brand name be established to promote the unique nature of the Islands. If the community is willing to spend the money on marketing, it can be assured that the money will stay on the Islands. However, there must be community will to take advantage of the tremendous opportunities that exist.

The authors discussed the option of training off-island pickers in species identification and picking methods. Some on the Islands consider this a controversial suggestion. However, this would provide the opportunity for locals to teach off-islanders the proper way to pick mushrooms, and how to identify other NTFPs that may have value.

The authors stated their belief that obstacles to the expansion of the NTFP industry that have been identified by locals, including transportation costs, can be overcome. For example, products could be transported on a backhaul to Alberta (a major mushroom processing facility operates in Edmonton).

There may be opportunities for local people in secondary processing of NTFPs on the Islands. Freezing of mushrooms could be considered locally. Chanterelles don't dry well. However, acceptance of frozen mushrooms is growing in Europe. Freezing allows you to use mushrooms that are often unsuitable for the fresh market. There are more opportunities for transportation of frozen mushrooms, and you can hold onto the product until the markets are favorable. There is some unused freezer capacity available on the Islands. However, energy costs are high. It would be beneficial to carry out a study on what the break-even point would be for this value added initiative.

A participant stated that this report must present the cautionary side of the issue. We could all leave this meeting and go into the forest and cut willow for export, but we don't know what the impact of this activity might be.

The authors commented that if there are large amounts of these products going out en masse, it devalues the product. There may be opportunity to use brand names and capture the novelty of the products from the Islands to get a top price. There are also ways to create economic benefit from NTFPs while maintaining the resource through promotion of guided "mushroom walks" and tours for mycological societies.

A participant shared his opinion that salal can nearly be considered a forest pest on the Islands, and it is very abundant. Salal grows better when it is pruned. The floral industry requires a particular type of forest stem, with a specified number of branches, so it is unlikely that picking of salal would be widespread. He stated that if he had a salal patch, he would want regulations in place to ensure that he could manage the area himself, and prohibit others from flooding the market.

The authors commented that there are thousands of web pages that discuss the area of NTFPs. The market currently works through the local brokers, but the Internet allows specialized marketing. If the issue of title can be resolved, there are ways of using salal. The web contains information on how to bundle the salal, how to pick it and tend it, etc. However, the floral industry is sensitive to trends. To succeed, businesses have to be flexible and innovative.

The participant stated that it's good to see these ideas being imported to the Islands. Islanders have lain back in the past, and then when the fishing lodges came here, we stated "that's our resource." The lodges are doing the marketing, they're putting their neck out and assuming the risk. Right now, a salal broker from Vancouver Island could come here and expand his business, making it viable on the Islands. But Islanders would say, "that's our resource." These risk takers are committed to doing things. We're accustomed to big industries spoon feeding us.

The authors commented that the NTFP industry may not typically support large-scale business on the Islands. Its may be more geared to small-scale family operations that profit.

A participant commented that for any initiative to work, it has to be economic. You can label this as greed, but it's how we're made. Utopian communities don't make it.

The authors commented that there are phenomenal patches of mushrooms on the Islands that are currently not being picked. However, Skidegate Lake seems to have special qualities that may be attributed to the forest fire went through the area.

The group discussed the government's interest in the pine mushroom sites of the Nass Valley. Inventory work is being done there by satellite and the MoF has recently attempted to segregate some pine mushroom areas from timber harvesting activities. Forestry companies have knowledge as to what their tenures contain.

The meeting concluded with the authors stating that if this report generates debate on the topic, then they done their job on the Islands. Further questions or comments from participants were welcomed and should be directly to the authors individually. Written comments on the draft report will be accepted up to January 31, 2000.

Appendix B: Industry Contacts

Exporters/Distributors

Great Canadian Mushroom Co. Ltd.
Contact: Pierre Brulot
PO Box 2554
Sidney, BC
Phone: 250-519-1038

- Product: Almost solely chanterelles (99% of mushroom purchased) some Lobster and blue chanterelles are purchased, but very little.
- Buyers: Usually has two, based at Skidegate Lake and Port Clements. Buyers are locals.
- Destination: Warehouse in Richmond, then shipped directly to Europe.

Ponderosa Trading Company Ltd.
Contact: Joe Nadeau
Vancouver, BC
Phone: 604-273-8308

- Products: Most wild mushrooms.
- Buyers: Usually has two to three buyers in the QCI during the peak of the season.
- The buying done from Port Clement and Sandspit.
- Destination: Mushrooms are shipped by plane or truck to Vancouver to the processing plant where they are graded and sorted. Ponderosa Trading services most of the restaurants and hotels in Vancouver. Some mushrooms are shipped directly to wholesalers in the United States (names not released). Many of the mushrooms are shipped to wholesalers and distributors in Europe.

St. Jean's Cannery
Contact: Gerrard St. Jean
242 Southside Dr.
Nanaimo, BC.V9R 6Z5
Phone : 250-754-2185
Fax : 250-754-5923
Email : stjeans@island.net
http://www.stjeans.com/

- Product: chanterelles
- Buyers: Usually has one during peak season. To buy chanterelles, the buyer is usually set up in the south (Sandspit area).
- Destination: Mushrooms are exported both fresh and canned. Recommends a processing plant on the QCI, to decrease the cost of transport.

Emperor Specialty Foods Ltd.
Contact: Bob MacDonald
Vancouver, BC
Phone: 604-276-0035

- Products: The main NTFP from the Queen Charlottes is the yellow chanterelle.
- Buyers: Usually has two to three buyers acting under the Arrow label in the QCI during the peak of the season. The buying tends to be done from Port Clement and Sandspit.
- Destination: Mushrooms are shipped by plane or truck to Richmond to the processing plant where they are graded and sorted. Emperor Mushrooms services many of the restaurants and hotels in Vancouver and Western US. The company has focused more on shipments to the US where it finds the market is growing and there is less competition from lower cost Eastern European product. The company has a range of dried mushrooms under its own label, which it markets in Western Canada through the SuperValu chain and other outlets. It plans to expand into the US. Not all its dried product is BC sourced.

Betty's Best Mushrooms
Betty Ann Shore
Brittany Beach, BC
(819) 896-2231

Mo-Na Foods
Otto Holzbauer
Edmonton, Alberta
(403) 435-4370

Tsunami Mushroom Co. Ltd.
Contact: Steven Mills
Now currently located on QCI
Email: smills@osg.net
http://www.tradezone.com/tradesites/Tsunami.html

Floral

United Flower Growers (Burnaby Flower Auction)
Contact: Darlene Cump Phone: 604-430-2211

Western Evergreen

Contact: Richard Ross	OR	Jim Palmer
4660 Western		1735 19th Ave
Courtenay BC		Campbell River, BC
V9N 3T2		V9W 4M4
Phone: 250-334-4626		250-287-9336

Floral Retailer. Would purchase floral greenery such as salal and sheet moss if it were delivered (and of high quality) to any of the plants; Courtney, Campbell River, Nanaimo. The market for dried floral products has decreased over the past couple of years so there is less of a desire for these products. Also acts as a mushroom buyer in Courtenay for St. Jeans Cannery.

Coulee Pickings -Ltd.
Harold Moen
190 Hodsman Road
Regina, Saskatchewan
(306) 721-7863
mharold.moen@sk.sympatico.ca
http://www3.sk.sympatico.ca/moenh/
Processors of preserved floral arrangements for sale to major retailers such as Supervalue and Wal Mart. Currently purchases salal from BC, processes and packages for sale back to BC (and other) retailers.

Botan Marketing
Chris Delich
Phone: 604-729-6455
This company is actually not in business at the moment, however he is considering the possibility. The product is preserved salal.

Hyawatha
Contact: Mike Clark
Box 1017
Royston, BC
V0R 2V0
Phone: 250-334-3299
Floral retailer. They would be willing to purchase quality salal. It would be the responsibility of the harvester to deliver the product to the company.

Kootenay Cone Company
5526 Stag
Wycliffe, BC
V0B 2M0
Phone: 250-426-1859
Purchases seeds and cones.

Yellow Point Propagation
13735 Quennell
Ladysmith, BC
V0R 2E0
Phone: 250-245-4635
Purchases seeds and cones.

NUTRACEUTICALS / OTHER

Wilcox Natural Products
Contact: Daniel Vickers
P.O. Box 391
755 George Wilson Rd.
Boone, NC 28607, USA
Phone: (828) 264-3615
Fax: (828) 264-2831
E-mail:DVICKERS@WNP.com
http://www.goldenseal.com/
Retail/wholesale of medicinal roots, herbs, barks and berries, both cultivated and wildcrafted. This company is part of Zuellig Group North America, which is a very large, international organization.

Botanical Liasons
Trich Flaster
1180 Crestmore Drive
Boulder, Colorado
(303) 494-1555
E-mail: TFLASTER@rmii.com
Formerly a buyer for major herb processor now an independent consultant for "raw botanical ingredients, development of sustainable agriculture programs, product development - medical, personal care, pesticides.

PhytoChem
Warren Steck
Saskatoon, Saskatchewan
(306) 668-2552
manufacturer of extract from fireweed

The Essential Oil Company
Robert Seidel
Portland, Oregon
(503) 872-8735
E-mail:morder@essential.com
http://essentialoil.com
This company produces essential oils from cedar and other products through a simple steam process.

Pacific Rim Trade Development Inc.
Fax: (503) 274-1587
Portland, OR. USA
www.europa.com/%7Eyarne/prtdi.htm

An international trading development company in Portland, Oregon, which acts as an agent for companies desiring to purchase or sell products through export or import to the United States.

The Herbnet
http://herbnet.net/index.htm
This site has extensive information on herbs, herb products and remedies, herb publications, and herb wholesalers. Although most of the listed wholesalers are in the United States, there are possibly potential sources for wild herbs. If an individual is willing to pay an annual fee, this website also offers a business and resource guide, called "The Herbal Green Pages", which lists over 5000 herb related businesses across the United States and around the world, as well as help in locating sources for a product – presumably either selling or buying.

TOURISM

Delkatla Bay Birding Tours
Contact: Margo Hearn
Delkatla Wildlife Sanctuary
Masset, BC
Phone: 250-626-5150
Tours of the flora and fauna of the sanctuary, often combined with meals. For example, a "bird and breakfast" is offered at $25.00 per person.

Queen Charlotte Adventurers
3-3207 Warf St. Queen Charlotte City
Phone: 250-559-8990
Fax: 250-559-8983

Maple Leaf Adventures
2087 Indian Cres.
Duncan, BC V9L 5L9
Phone: 1-888-599-5323
Fax: 250-715-0912
E-MAIL mapleleaf@mapleleafadventures.com
http://www.bcadventure.com/mapleleaf/default.htm
Sailing trips include visits to the Queen Charlotte Islands, in which native heritage sites are toured. Resource people (occasionally First Nations) accompany the tours.

Wild Food Adventures
John Kallas
5036 SE Mitchell St, Portland, OR 97206-4814
Phone: 503-775-3828
e-mail: wildfood@teleport.com
http://www.teleport.com/~wildfood

This company provides workshops, presentations, and expeditions anywhere in North America, dealing with wild foods and traditional plant usages.

Workshops / Education Sources

KWC Training
Contact: Tim Brigham
743 21st Street
New Westminster, B.C.
V3M 4X8
Phone/Fax: (604) 526-2600 or: (604) 526-3454
e-mail: tbrigham@mortimer.com http://members.home.net/kwctraining

Pacific Rim Institute of Tourism
Vancouver BC
Phone: 604-682-8000
http://www.prit.bc.ca/
Not a direct company dealing with tourism, this institute is instead an information resource for individuals and companies wishing to expand into tourism. This institute holds over 3000 literature works regarding tourism in their library. Research can be done at the Vancouver library, or a subscription to the organization can be obtained (one year is $125.00) and articles requested could be sent to an individual.

Similar Companies / Value-added ideas

Alaska Tribal Cache
Phone: 1-800-270-7810
Fax: 1-907-234-7637
by Chesloknu Foods, a division of: Seldovia Village Tribe
PO Drawer L
Seldovia, Alaska 99663
Email: webmaster@alaskatribalcache.com
http://www.alaskatribalcache.com/
Examples of value-added products from wild berries and honey.

Oregon Wild Berries, Inc.
77129 Watach Dr.
Clatskanie, Oregon, 97016
Phone: 1-888-455-7656
http://oregonwildberries.com/
Examples of jams, jellies, syrups, and specialty berry products.

Genuine Northwest Products
Oregon and Washington Warehouses
Phone: 1-800-874-9333
http://pacificnwprod.com/index.htm

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For inquires: gfritz@artsci.wustl.edu

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For inquiries: scipubs@nybg.org

Natural Resource News. 1998. Blue Mountains Natural Resources Institute. Pacific Northwest Research Station. Published quarterly.
For inquiries: bmnri@eou.edu
Located on the web at: http://www.eou.edu/bmnri

Web Sites:

Dave Fisher's North American Mushroom Basics
http://members.aol.com/xerula/basics.html
This site provides basic information on the biological aspects of mushrooms, as well as books for mushroom identification and links to other mushroom sites.

The Food and Agricultural Organization of the United Nations (FAO)
http://www.fao.org/forestry/FOP/FOPW/NWFP/nwfp-e.stm
FAO has a web site focused on non-wood forest products.

Gwaii Trust Society
http://gwaiitrust.com/
The Queen Charlotte Islands/Haida Gwaii, Gwaii Trust Society administers the Gwaii Development Fund, which was established as a locally controlled, interest-bearing fund to advance economic diversification and sustainable development on Haida Gwaii/the Queen Charlotte Islands.

Herb Info Canada
http://herb.plant.org/default.htm
This site contains information on a number of herbal subjects, including wildcrafting and wildcraft marketing.

Matsutake Forest Yield Analysis
http://www.olivotto.com/timber/matsutake/index.html
This site is based on a model study done by Olivotto Timber in the Cranberry Timber Supply Area in the Prince Rupert Forest Region of British Columbia. The object of the study was to determine the affect of various types of logging on mushroom harvesting, and the results and conclusions are provided.

Mycology Index
http://muse.bio.cornell.edu/~fungi/finex.html
"Really big index to mycology resources on the internet." The main purpose of this site is to provide a substantial number of links to extensive mycological subjects.

Myko Web
http://www.mykoweb.com
Information on various mushrooms and growing tips, a list of mushroom clubs of North America and contacts, as well as a number of links to other mycology sites.

National Aboriginal Forestry Association (NAFA)
http://sae.ca/nafa/
Excellent information on Aboriginal issues in forestry, including tools for stewardship, business development, forest management, policy and advocacy, education and employment. It also contains a release (full report) of "Value-added Forestry and Aboriginal communities: The Perfect Fit", which includes a section on NTFP.

Non-Timber Forest Products; United States
http://ifcae.org.ntfp.publications/assessment
This site is part of a US national project to assess NTFP. It contains "conservation and development information on commercial, recreational, and subsistence extraction of non-timber forest products in the United States with regards to cultural, ecological, economic, geographic, and political considerations". The purpose is to disseminate information pertaining to NTFPs in the United States. The website and information is not yet complete.

Pacific Northwest Wild Mushroom Home Page
http://www.vanisl.com/mushcash.html
Provides buyers (contacts) and prices for many species of wild harvested mushrooms for areas in the Pacific Northwest, including Vancouver Island and the lower mainland. It also provides tips for harvesting. (both US and Canada). This is potentially an excellent site but it is not always kept up to date.

San Juan Naturals
Friday Harbor, USA
http://bootstraps.com/index.html
This site is geared toward selling herbal publications, but it does offer some information regarding initiating a business with either grown or wildcrafted herbs. It also has links to other sites dealing with herbs in the marketplace.

The Ethnobotany Café
http://countrylife.net/ethnobotany/
An opportunity for discussion and extensive links.

The Herbnet
http://herbnet.net/index.htm
This site has extensive information on herbs, herb products and remedies, herb publications, and herb wholesalers. Although most of the listed wholesalers are in the United States, there are possibly potential sources for wild herbs. Further, information is given for initiating a commercial herb business, as well as contacts (although again, the contacts for information are in the United States). If an individual is willing to pay an annual fee, this website also offers a business and resource guide, called "The Herbal Green Pages", which lists over 5000 herb related businesses across the United States and around the world, as well as help in locating sources for a product – presumably either selling or buying.

United Plant Savers
http://www.plantsavers.org/index11.html
A non-profit organisation which works to protect native medicinal plants. Includes a newsletter and a list of species at risk.

United States Department of Agriculture (USDA) Special Forest Prducts Website
http://www.sfp.forprod.vt.edu/special_fp.htm
This site is produced by The Virginia Tech Department of Wood Science and Forest Products, the USDA Forest Service Southern Research Station and the Top of the Ozarks RC&D in Missouri . The purpose is to disseminate information on NTFPs and markets, and is designed for harvesters, growers, marketers, processors, and end-users. There is also information provided on relevant workshops and publications. This has potential to be an excellent site but it is based in the US, and the information is limited thus far.